City of Providence
STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS

RESOLUTION OF THE CITY COUNCIL

No. 290

Approved April 20, 2018

WHEREAS, As of June 30, 2017, the Employees' Retirement System of the City of Providence was funded at 25.28%, well below the 60% threshold the State classifies as being in "critical" condition; and

WHEREAS, As of June 30, 2017, the City's actuaries calculated the unfunded liability for the pension fund to exceed $1 billion; and

WHEREAS, The current amortization schedule for the City's pension contributions calls for annual increases that have the potential to crowd out funding for other vital City initiatives over the next decade while placing funding of the pension itself in jeopardy; and

WHEREAS, While the current options to address these deficits involve difficult choices, there will be even fewer options in the future if the issue is not addressed promptly and proactively; and

WHEREAS, In September, 2017, several City Council members and the Chief Operating Officer began to meet to review the City's unfunded pension liability and payment schedule; and

WHEREAS, During the past seven months, the working group met eight times to investigate such issues as the history of the City's unfunded pension liability, the current schedule of pension payments and the options and tools available for mitigating the impacts of future increasing payments; and

WHEREAS, The working group prepared a report with its findings and recommendations.

NOW, THEREFORE, BE IT RESOLVED, The members of the Pension Working Group present the attached Report and exhibits for review by the City Council's Finance Committee, and for consideration and discussion among the City Council, the administration and the general public.

IN CITY COUNCIL
APR 19 2018
READ AND PASSED
David A Salvatore
PRES.
Lori L Hagen
CLERK

I HEREBY APPROVE.
Mayor
Date: 4/20/18

Report of the Pension Working Group

Chief Operating Officer Melissa Malone
Councilwoman Nirva LaFortune
Council President Pro Tempore Sabina Matos
Council President David Salvatore
Councilman Samuel D. Zurier

April 12, 2018

Introduction

In 2011, the City faced a "Category 5 fiscal hurricane" that required drastic and painful actions, including cuts in services and pay (closure of schools, 10% budget and pay reductions, etc.) and revenue increases (nonprofits, State aid, tax increases, etc.) It was not enough. In 2012, Mayor Taveras announced that, absent pension reform, the City would have no choice but to go into bankruptcy.[1] That year, most stakeholders (employees, retirees) ultimately agreed to $170 million in pension savings, and the courts upheld the reforms against legal challenges from the remaining opponents.

While this massive campaign averted catastrophe, everyone understood that the full pension deficit (which prior to the 2012 reforms exceeded $900 million) was much greater, and that more work was needed. Since then, current City employees have agreed to incremental improvements in successive collective bargaining agreements, but the pension deficit has continued to increase, exceeding $1 billion (and growing) as of July 1, 2017.[2] While this figure (and the 25.28% funded ratio) is unsettling in the abstract, the future impacts on City services will cause real harm to people's lives. Under the status quo, the City's annual required contribution ("ARC") to the pension fund will increase by $38 million (from the current level of $78 million to $116 million) over the next decade, at the end of which the funded ratio will have reached 41.4%. Exhibit 1 (Segal Consulting Actuarial Evaluation as of June 30, 2016).[3] Five

1 "Providence Mayor Moves Financial Woes to Fore," New York Times, April 30, 2012.

2 City of Providence, Comprehensive Annual Financial Reports for Fiscal Year Ending June 30, 2017.

3 The calculation assumes an 8% rate of return on the retirement fund investments. Were this reduced to a lower figure, the deficit would increase. For example, most recent financial report, the unfunded liability as of June 30, 2017 was calculated to be $1.00 billion assuming an 8% rate of return, and $1.15 billion assuming a 7% rate of return. *See* City of Providence, Comprehensive Annual Financial Report, Fiscal Year Ending

years after that, the City's ARC will increase another $22 million (to $138 million) , while the funded ratio will rise only to 58%, below the State's 60% threshold for "critical" status, with even more drastic increases after that.[4] The City's current tax levy is $350 million; therefore, the 2033 ARC would require 40% of all the property tax dollars raised this year.

The City's increasing budgetary commitment to pension costs already is a major drag on the City's finances. Since 2001, the City's ARC has doubled, from $39 million to more than $78 million. This added $39 million expense has prevented the City from improving services and/or reducing taxes. For example, $12-$13 million of the lost revenue could have added 100 police officers to the force, bringing Providence closer to the levels it enjoyed in 2007. Alternatively, $21 million from the revenue the City has lost from increased pension payments could have reduced the commercial tax rate (which, at $36.70 per $1,000 valuation, is one of the nation's highest for major and mid-sized cities)[5] by more than $6.00, providing relief to resident businesses while spurring a construction boom without a need for tax treaties or stabilizations. Both of these initiatives could be in place today (with millions more to spare) if today's ARC were at the 2001 level. Instead, the City is currently on a course to increase its annual pension

---

June 30, 2017 (referred to below as "2017 Annual Financial Report"), p. 51, viewable at https://www.providenceri.gov/wp-content/uploads/2018/01/Comprehensive-Annual-Financial-Report-2017.pdf

4 For example, the 2038 projected ARC under the status quo is $164 million. The Fitch rating agency classifies public pension plans (based on an assumed rate of return of 7%) as "healthy" if the funded ratio is above 70%, and "weak" if the ratio is below 60%. *See* http://www.ncpers.org/Files/2011_enhancing_the_analysis_of_state_local_government_pension_obligations.pdf.

5 In a 2017 study (based on 2016 tax rates), the Lincoln Land Institute ranked the commercial tax rate in Providence as fifth highest in the country among a cohort of major cities. *See* "50 State Property Tax Comparison Study" viewable at https://www.lincolninst.edu/sites/default/files/pubfiles/50-state-property-tax-comparison-for-2016-full.pdf

contributions by another $38 million over the next decade, money that will be raised either by painful and counter-productive tax increases, or by harmful reductions in vital City services.

As grim as the "status quo" projection is, it may prove to be excessively optimistic. Last year, for example, the pension fund received $83.8 million in contributions from the City and City employees, while paying out $103.1 million in benefits to retirees, a gap of almost $20 million.[6] Fortunately, the pension fund received a 12.2% return on its investments, yielding the pension fund a net gain of just over $15 million; however, it would not be prudent to assume extraordinary investment returns going forward.[7]

In short, the unfunded pension liability is Providence's version of the global warming crisis, an existential threat looming on the medium-term horizon that becomes more difficult to solve with each successive year of inaction.

In this Report, the Working Group presents an overview of this crisis, describing its origins, current trends and possible tools to resolve it. The Report also recommends the City engage all stakeholders to develop and adopt a sustainable plan to fund the pension at a ratio of 60% or greater by June 30, 2028.

---

6 City of Providence, Comprehensive Annual Financial Report for Fiscal Year Ended June 30, 2017, pp. 47-57.

7 Changes in anticipated career length and duration of retirement also can affect the City's pension obligation. For example, early retirements of City workers can extend the predicted pensions paid out to them, thus increasing the cost of these pensions. During 2015-17, approximately 104 fire fighters took service retirements. This represented an increase from the annual average of 13 service retirements taken over the previous 25 years, suggesting that some of them may have retired sooner than otherwise expected. In a future study, the City's actuary will calculate the impact of these retirements on the City's pension obligation.

I. Background

Providence provides its employees with a "defined benefit" pension, which determines the amount of an employee's pension through a formula based on years of service and salary history, without regard to investment returns or funding levels.[8] The Governmental Accounting Standards Board ("GASB") requires public employers offering a "defined benefit" pension to pre-fund it, by having the employer contribute money into a retirement fund to pay for future obligations at a rate designed (based on expected investment returns and payouts) to allow the fund to pay all obligations as they become due.[9] While the GASB standards are not legally binding, bond rating agencies measure a city's compliance with GASB when assessing its financial stability. As a result, Providence must meet the GASB standards if wishes to retain access to credit at affordable interest rates. Providence needs this capital to maintain its school buildings, streets, sidewalks, City buildings and other infrastructure.

Each year, the City's actuary calculates the "annual required contribution" (or "ARC") needed to amortize the pension fund obligation over a set period of years. As is true for a home mortgage, annual costs can be reduced by extending the length of time needed to pay off the obligation. Providence has adopted a 30-year amortization schedule, which is the longest period allowed by GASB Standard 27.

Providence's pension crisis dates back to 1989. As of June 30 of that year, the Providence Employees Retirement System had $216 million in assets and $343 million in total

---

8 In contrast, a "defined contribution" pension system, such as a 401(k) fund, fixes the amount of money that goes *into* the employee's pension account without any guarantee or limitation as to how much will be available for the employee to withdraw at retirement.

9 Providence must meet GASB reporting requirements to qualify for affordable bond financing, which is critical to the City's ability to function.

liabilities, for a deficit of $137 million and a funded ratio of 65.4%.[10] While this was far from complete funding, it exceeded the State's 60% threshold for "critical" status.[11] Disaster followed. At a December 6, 1989 meeting, the employee-controlled Retirement Board dramatically increased cost of living adjustments ("COLA's") and minimum pensions, while reducing required years of service, changes the Director of Administration said "broke the City."[12] Over the next two years, the Retirement Board awarded generous disability pensions to an unprecedented flood of employees, while increasing COLA's to as much as 6% compounded annually, raising the City's required contribution into the pension fund from $12 million to $32 million. *Id.* The courts rejected the City's various legal challenges, but the City did not increase its pension contributions sufficiently to match these increasing obligations.

By 2004, the pension's funded ratio had fallen below 40%. The City formed a Pension Study Committee, which published a report in 2006.[13] The Report proposed reforms to the disability pension approval and verification process, and reforms to early retirement, accidental disability pensions and eligibility for post-retirement health benefits. 2006 Report, pp. 12-18.[14] The City Council enacted legislation to implement many of these reforms, but the pension

---

10 Report on the Evaluation of the Employees' Retirement System as of June 30, 1990.

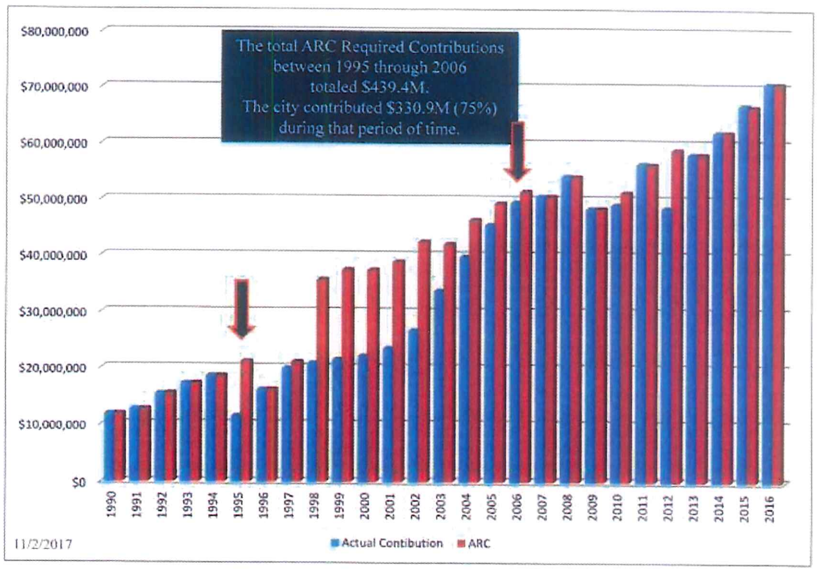
11 *See* R.I.G.L. §45-65-4(3).

12 "Retirement board once dominated by unions compounded Providence pension woes," Providence Journal, June 7, 2011

13 *See* 2006 City of Providence Pension Study Committee Report, viewable at http://clerkshq.com/content/Attachments/Providence-ri/2007_365.pdf.

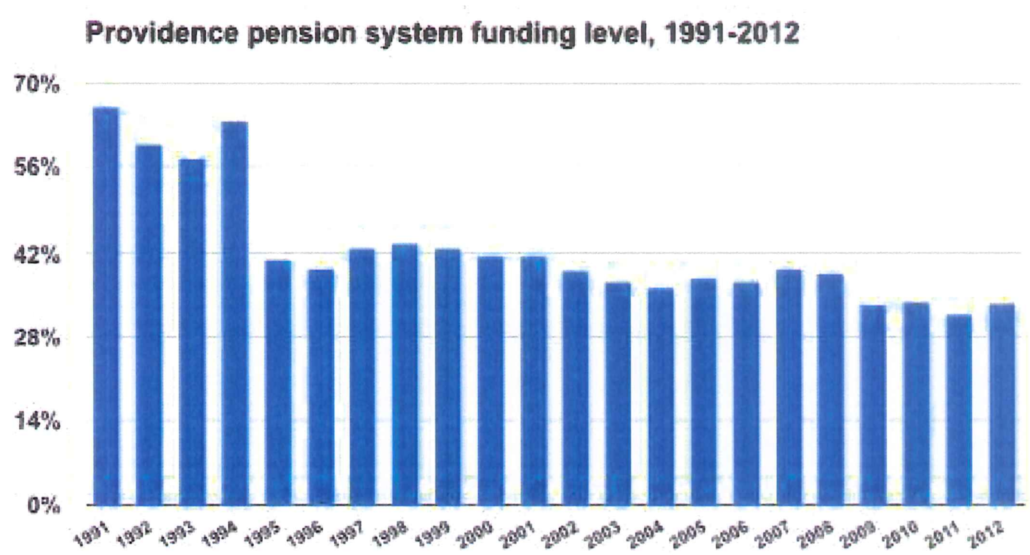
14 The 2006 Report also recommended the City issue pension obligation bonds, which would allow the City to increase its stock market exposure. Fortunately, the City did not follow this recommendation, which would have increased the City's investment losses during the 2008-09 stock market reversals.

obligation continued to rise, and the City fell further behind, as reflected in the following chart prepared by the Internal Auditor:



q

This mismatch of obligations and contributions produced a steady decline in the pension's funding level, as depicted in this chart from WPRI.com:[15]



15 Ted Nesi, "Providence's troubled city pension fund, in three charts", Nesi's Notes, WPRI.com, October 1, 2014.

In 2011, the City Council formed a Subcommittee on Pension Sustainability, which generated a 2012 Report recommending further reforms.[16] Later that year, the City negotiated and enacted a $170 million package of pension fund savings, consisting of reductions in benefits for non-vested employees and new employees, a permanent reduction in the highest COLA's, a suspension of many COLA's for a period of years, and caps on total pension value relative to the salaries paid to active employees.[17] The City Council enacted revisions to the pension ordinance that achieved savings by adjusting such criteria as required years of service and calculations of the final salary on which the pension was based.

Since the 2012 reforms, the City has negotiated modest additional pension savings in subsequent collective bargaining agreements. The City accelerated the timing of its annual contribution to the pension fund so that it can earn a greater return over time. The City adopted a policy of contributing 100% of the ARC, which has risen to $78 million, an increase of more than 600% above the 1989 level of $12 million. Of that $78 million, less than $9 million is needed to pay the "normal cost" of funding retirements for current employees, while the balance is dedicated to paying the "legacy cost" of retired City employees. Today, the pension contribution accounts for roughly 54% of the annual payroll. With these changes; however, the funded ratio remains at an anemic (and virtually comatose) 25.28%.[18]

---

16 The 2012 Report is viewable at http://council.providenceri.com/efile/103.

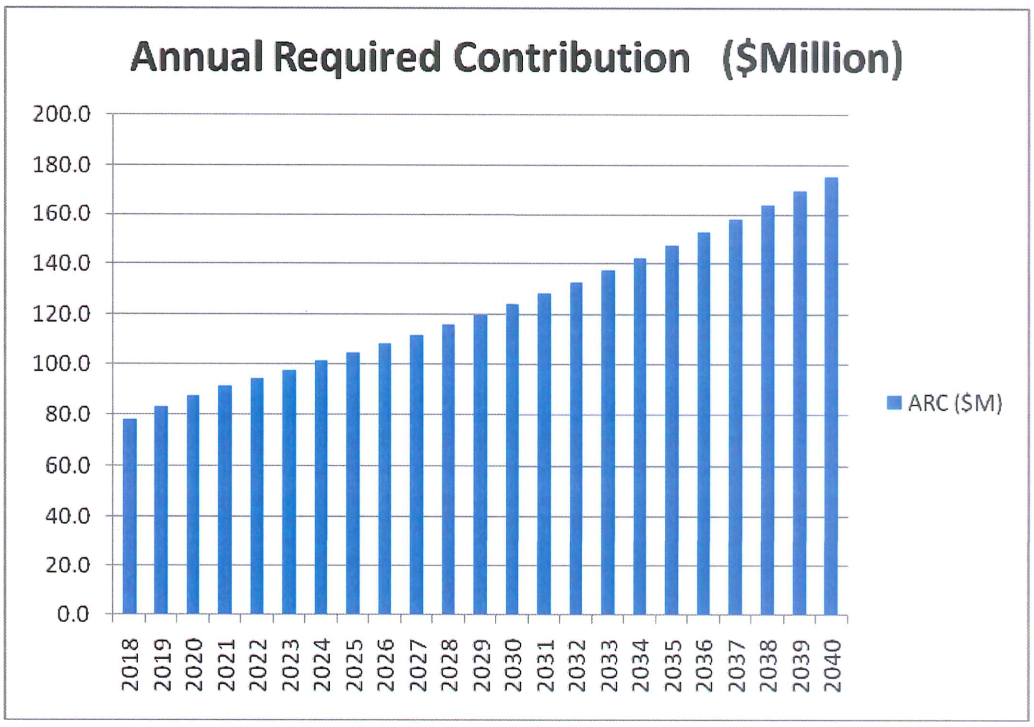
17 Greenberg Traurig, Providence Pension Reform Case Study (Power Point presentation viewable at http://www.bu.edu/ioc/files/2015/05/27-2_3Taveras-Slides.pptx).

18 The 25.28% funded ratio is stated in the City's 2017-18 Comprehensive Annual Financial Report. *See* n. 3, above. It is based on an assumption the City's investment portfolio will generate an average rate of return of 8%. If the assumed rate of return is reduced, the pension deficit increases, and the funded ratio decreases. *Id.* For example, the 2017-18 Report states (at p. 51) that if one assumed a 7% rate of return, the unfunded liability would increase to $1.15 billion, resulting in a funded ratio of approximately 23.24%.

II. Current conditions and trends

A. Pension contributions

The City's current pension payment schedule is affected by two benchmarks. First, the City began a 30-year amortization in 2007, which means it is on a schedule to fully fund the pension by June 30, 2037.[19] Second, payments are set to increase by 3.5% annually. On its current course, the City's annual required pension contribution will rise on the following schedule:



As the chart indicates, the annual required contribution will increase by more than $38 million (to $116 million) over the next decade. According a report prepared by the Internal Auditor (Exhibit 2), the average homeowner's tax will increase by $350 to cover this single expense over that decade, while the average business property tax bill will increase by more than $1,200. In the five years that follow, the ARC will increase by another $22 million (to $138

19 This is the maximum amortization period permitted by GASB Standard 27.

million). Given the City's current property tax levy of $350 million, the projected ARC in 2033 would consume 40 cents out of each dollar paid by Providence taxpayers today.

Nor will things become any easier if the City somehow makes its pension payments through 2033. On the current schedule, payments after 2033 will increase by more than $5 million annually, ultimately reaching $176 million (or half the current tax levy) in 2040. In fact, given the actuary's current assumed rate of return of 8%, this chart understates the problem. If, for example, the City adopted a 7% rate of return (the target adopted by the State Retirement Board in May, 2017), the current accrued pension liability would increase by more than $150 million, and the 2028 ARC would increase further by approximately $10 million. The City cannot raise an extra $100 million per year to pay its upcoming pension obligations; instead, the current course will "break the City."

B. Anticipated revenues

The City's high commercial tax rate (which also applies to residential apartments of six units or greater) has discouraged new development. Because of the City's precarious fiscal position, it is not possible to implement a dramatic reduction in the commercial tax rate to overcome this hurdle; instead, the City provides incentives to developers that defer payment of full taxes. The largest example is the Providence Place Mall, which is subject to a tax treaty that limits annual payments to the City in lieu of taxes to $500,000 for another decade before full taxation (which at current rates would likely exceed $25 million) goes into effect. While the Providence Place Mall treaty appears to offer some potential future relief, its future taxable value may be subject to changes in the retail and real estate markets.[20]

[20] *See, e.g.*, "Competitor Buying Providence Place's Chicago Owner At A Discount," Providence Journal, March 28, 2018.

More generally, the City encourages development through a tax stabilization program that provides commercial developers with a "stabilization period" of 10 to 20 years in which to progress from partial to full taxation. According to the Internal Auditor's December, 2017 report,[21] the current inventory of stabilized properties has an aggregate "true" value of approximately $500 million, which would generate $18 million at full taxation, but currently generates $7 million, thus indicating $11 million of tax base growth.[22] In a March, 2018 update, the Internal Auditor included recently approved stabilizations, which are projected to provide a potential addition of more than $63 million by 2037, a promising future, but not sufficiently timely to address the pension crisis. Similarly, the Wexford project on the I-195 land may someday come to fruition, but it will likely be subject to a 20-year tax stabilization agreement, again too far in the future to help the City with the looming pension crisis.

C. Other budgetary stresses

In the meantime, the City will face other significant fiscal challenges beyond the pension, including the School Department, retiree health benefits and infrastructure.

The School Department "local budget" for FYE June 30, 2018 is $382 million, of which the City funds approximately $128 million, with the balance coming from the State ($247 million) and other sources ($7 million).[23] Over the past seven years, the State implemented funding formula increases that added approximately $40 million to the budget, allowing the

---

21 Review of Tax Stabilization Agreements, viewable on the Internal Auditor's web page at http://www.providenceri.gov/internal-auditor/ .

22 The City's agreement with Providence Place Mall is a "tax treaty," which is counted separately from the inventory of tax stabilization agreements.

23 It also should be noted that the "local budget" does not include federal funds, which have declined from $40 million in 2011-12 to $30 million currently, and which are targeted for further cuts under the current administration.

Providence Public Schools to maintain its essential program even as the City enacted flat appropriations for six of those years. The State's formula-based education aid increases end this year, and the City will see increased expenditures from charter school enrollment growth (which reduces State aid without corresponding savings in fixed costs) and other natural increases (State pension, health care, utilities, etc.). According to the School Department's current 5-year projection, the gap between non-City revenue increases and overall cost increases will expand by a total of $37 million by 2023.

Providence also faces a major liability in the form of health benefits provided to retirees (also known as "OPEB" or "other post-employment benefits") which it currently satisfies on a "pay as you go" basis, with a cost in FY 2017 of just under $27 million.[24] According to the City's latest annual financial report, the City would require a fund of $956 million to pay off these costs over time, and the current fund holds only $1 million. While the financial standards do not currently mandate the establishment of a reserve fund, GASB Standards 43 and 45 require the City to track the cost of establishing such a fund, which its actuary estimated in 2015 to equal $45 million per year on top of the amounts paid out in benefits. At this point in time, neither Providence nor many other municipalities have the financial capacity to fully fund a retirement benefit reserve; however, the prospect of steadily rising medical costs will continue to be a source of stress on City finances for the foreseeable future.

There also is the issue of the City's infrastructure, which has suffered from years of deferred maintenance. In 2015, the City Council's Bond Study Commission issued a report identifying several hundred million dollars of needed repairs to the City's inventory of streets,

---

24 *See* 2017 Annual Financial Report, pp. 58-60.

sewers, parks and sidewalks, before accounting for public buildings or schools.[25] While capital needs can be addressed with bond financing,[26] there also is a need to invest substantial funds in the operating budget to maintain infrastructure both to extend its useful life, and to promote residents' safety and quality of life.

To conclude, the City's current increasing pension obligations will crowd out the essential functions of government, eroding the public schools, public safety and quality of life until the City reaches a point of total failure. We are currently on a course to begin seeing those major stresses within the next decade.

III. Tools for resolution

While the City's lack of progress in reducing the pension deficit further since the 2012 reforms is regrettable and harmful, the prospect of spending money on this medium-term problem rather than using it on more attractive tangible projects (more police officers, recreation centers, school programs or tax relief, for example) can be understood as a normal reaction of human nature. As will now be described, a realistic solution to a problem of this magnitude will require contributions from many stakeholders who are not inclined to view themselves as responsible for the problem. This section of the Report will evaluate and quantify potential tools to achieve a minimum goal of moving the pension out of "critical status" (i.e. a funding ratio of

---

25 This year, the Governor and Treasurer are supporting an initiative to increase State funding for school repairs by issuing $500 million in bonds. While the State's current reimbursement formula provides Providence with more than 80% State aid for school repairs, the current estimate for all of the City's school buildings exceeds $300 million.

26 As noted (*see* p. 3, above), Providence must comply with GASB standards (including payment of the annual recommended contribution) in order to retain access to affordable credit in the bond market to maintain its infrastructure.

60% or better) within the next ten years, and a sustainable path to full funding in the years that follow.

A. Bankruptcy

If the City does not solve its pension issue, bankruptcy will follow. With that said, other cities (such as Central Falls and Detroit) have emerged successfully from bankruptcy court to gain a fresh start, leading some to suggest that Providence could use the bankruptcy process as a pre-emptive tool to clear away and/or substantially reduce its pension obligations before it reaches the desperate condition predicted for the coming years. When this working group investigated the bankruptcy option further, however, it learned that (1) the City in its current financial position is unlikely to qualify for receivership or bankruptcy, and (2) even if the City were to qualify, the damage from bankruptcy proceedings likely would exceed the relief they could provide at this point in time.

More specifically, a city seeking protection under Chapter 9 of the federal bankruptcy code must, among other things, meet two requirements that the City of Providence is unlikely to satisfy in the foreseeable future. First, a municipality must have authorization from the State.[27] The Rhode Island Fiscal Stability Act, R.I.G.L. §§45-9-1 *et seq,* prescribes a series of escalating interventions (fiscal overseer, budget review panel and receiver) for municipalities facing fiscal challenges, and confers upon the State-appointed receiver the decision as to whether to seek bankruptcy protection. Because the receiver answers to the director of revenue, and because a municipal bankruptcy would have statewide implications beyond the petitioning city or town, a receiver might be especially reluctant to authorize a bankruptcy for the City of Providence.[28]

---

27 *See* 11 U.S.C. §109(c)(2).

28 A city or town also could meet Section 9's requirement of state authorization by petitioning the General Assembly directly; however, it is not likely the General Assembly

A second reason that Providence is unlikely to qualify for bankruptcy in the near future is that a petitioning municipality must demonstrate it is "insolvent." (11 U.S.C. §109(c)(3)). In this context, courts look to whether a municipality can make payments as they become due. The City's pension fund currently holds more than $350 million in assets, and the current annual contribution to the pension fund is less than $100 million; therefore, the current fund is at least three years away from insolvency.[29] In the meantime, the City has returned an operating surplus for the past two years, also negating its eligibility for bankruptcy protection. In short, a city or town cannot seek bankruptcy protection until it spends down essentially all its savings in whatever form, and run out of cash flow to pay bills as they become due.

Unless Providence became completely destitute, the cure of bankruptcy is probably worse than the disease that triggered the petition. First, the pension fund itself would probably be reduced to close to zero in order for the City to qualify for bankruptcy protection, creating a deeper hole from which to emerge. Bankruptcy relief from payments of invoices for goods and services provided by vendors and other creditors would cast a cloud over the City that would deter development. Also, any bankruptcy plan likely would include maximal task increases for a period of years (such as five years in the case of Central Falls). Finally, the stigma associated with a bankruptcy in the State's largest and capital city could produce "contagion" effects for both the State and other cities and towns. For these reasons, municipal bankruptcy is not a "trump card" to play at the City's convenience; instead, it is a drastic last resort that becomes available only after the ship strikes the iceberg.

---

would favor a city or town's efforts to avoid the orderly process set forth in the Fiscal Stability Act.

29 Because the pension fund currently pays out less than the City contributes each year, this calculation probably understates the number of years the City will maintain a pension fund with a positive net balance under any scenario.

B. Continual re-amortization

GASB Standard 27 requires that municipal employers of defined benefit pension plans create a reserve account that amortizes current and future obligations over a maximum period of 30 years. This requirement is similar to a standard home mortgage, in which a portion of each monthly payment is for interest, while the balance is to "pay down" the remaining amount owed.[30] In 2007, the City re-amortized its pension fund, thus re-starting the 30-year clock based on the amount owed at the time. This provided a reduction in the annual required contribution for several years, as the chart on page 6 would indicate. Some have suggested that Providence could avoid the pain of increasing pension contributions by re-setting the amortization clock every year, which would be the equivalent of paying the interest only on a mortgage without ever reducing the amount owed.

This proposal is an example of what Leo Bloom once described to Max Bialystock as "creative accounting."[31] Rating agencies (such as Fitch which, as noted above, bases borrowing rates on pension funded ratios) would recognize continuous re-amortization (or even frequent re-amortization) as a subterfuge that will lead to future fiscal instability, thereby making the City's ability to borrow money more expensive and, possibly, unattainable. Under such a scenario, Providence would face such difficult choices as scaling back programs, raising taxes or deferring maintenance, which would lead to even greater costs down the road. Also, such a practice might

30 The analogy is not perfect. While a homeowner pays the same amount every month in a "fixed rate" mortgage, the typical pension amortization schedule builds in steadily increasing payments until the pension is fully funded, at which time they fall dramatically. The Providence pension payment schedule calls for payments to increase at a 3.5% annual rate.

31 *See* "The Producers" (1967), written and directed by Mel Brooks, starring Zero Mostel as Max Bialystock and Gene Wilder as Leo Bloom.

trigger the State's intervention under the Fiscal Stability Act to prevent future harm to the City or the State.

C. Components of a sustainable solution

In the absence of any "simple" or "painless" solution, the City must choose among difficult options to close (or at least substantially reduce) the current pension gap. With the help of a set of scenarios prepared by the City's actuary in March, 2016 (based on the pension valuation of July 1, 2015), the working group has looked at many of these possible difficult choices, and estimated the impact they would have on addressing the City's pension gap. Exhibit 3 provides a baseline "snapshot" of the pension fund as of July 1, 2015. At that time, the pension fund had an unfunded liability of $894 million and a funded ratio of 27.4%. Since that time, the fund's position has declined further (*see* Exhibit 1); however, the March, 2016 collection of pension runs (which is indexed to the "baseline" of Exhibit 3) is useful for comparative purposes, indicating the approximate savings each potential reform can generate. As noted above, the goal is to find possible solutions to a projected increase of $38 million in the ARC over the next decade, and a $60 million increase by 2033.

1. Active employees

a. Increased employee pension contributions

City employees currently contribute 7.5%-8.5% of their pay into the pension fund for an annual total of over $11 million. This amount is governed by collective bargaining agreements, and any change would have to be negotiated in that context. The City's actuary refers to the cost of maintaining the pensions of current employees as the "normal cost". In FYE 2017, the City met its ARC by contributing $8.6 million to fund the "normal cost" pensions of current employees (in addition to the employees' own contributions), and $69.1 million to pay the cost of amortizing the unfunded pension liability.

For those reasons, reducing the City's share of "normal cost" payments can provide at best modest relief. For example, Exhibit 4 calculates the impact of a hypothetical agreement by employees to increase their contribution share from its current range up to 10%. Compared to the status quo (Exhibit 3), this reform could reduce the City's "normal cost" contribution by $4 million annually. This change would represent at most a solution to 10% of the problem, while smaller increases in the employee contribution would provide lesser amounts of relief.

b. <u>Transition to hybrid plan</u>

Through the passage of the Rhode Island Retirement Security Act, the State of Rhode Island implemented a "hybrid" pension plan that combined "defined benefit" and "defined contribution" components. Under the State's plan, employees with extensive years of service retained the "defined benefit" plan (in which their pension amount was guaranteed based on pay levels and years of service) they had at the time of the reform, while new employees were provided a combination of a smaller "defined benefit" plan with a "combined contribution" plan (or what is known in the private sector as a "401(k) plan"). Employees with intermediate years of service were provided a combination that retained the vested defined benefits they had earned at the time of the reform.

The State undertook this transition to stabilize its future obligations. Because the bulk of Providence's current pension contributions are to amortize the unfunded liability rather than to pay for anticipated costs for current employees, a City transition to a hybrid plan would purchase long-term stability at a substantial short-term cost, as the City would be required to create a new 401(k)-type fund for existing employees in addition to continuing legacy obligations. Exhibit 5 provides an actuary's run for a sample hybrid plan, under which employees are moved to a hybrid plan (with a 2% employer contribution), and the City changes its amortization payments from the current 3.5% annual increase to a flat amortization schedule. These changes immediately increase the City's annual contribution by approximately $20 million, but that contribution remains fixed and/or declines slightly in all future years.

2. Retirees

In 2012, the City negotiated with retirees to suspend and reduce COLA's. The negotiations were codified in a consent judgment which would be, at a minimum, very difficult to change absent agreement. With that said, the working group wanted to know how much of the existing problem could be solved by adjustments to current retirement benefits. We found that less-than-severe adjustments would produce only modest savings.

Exhibit 6 provides a run in which the current freeze on COLA's is extended until 2034, when the account is projected to emerge from "critical" status. This produces a $60 million reduction in the accrued liability and a savings of around $6 million in the ARC, again at best a component of a solution.

In Exhibit 7, the actuary produced a scenario where all pensions up to $2,000 per month are preserved, and any excess above that amount is reduced by 5%. This change would reduce the ARC by $4 million -- $6 million annually over that period. A 10% cut (Exhibit 8) reduces the ARC by $10 million - $15 million annually.

3. Increased City contribution

As noted above (p. 6, above), the City failed to meet the actuary's annual recommended contribution into the pension fund on several occasions over the past quarter-century. The City asked its investment advisor to review the known timing and amount of these shortfalls over the past 21 years.[32] The investment advisor's report is attached as Exhibit 9. The advisor added the

---

32 As noted above, the City's pension crisis began in December, 1989, and the City failed to make full ARC payments in some of the years prior to the investment advisor's "start date" of July 31, 1996. The earlier underpayments were incorporated by the actuary, who

money in, and assumed it would earn the same rate of return as the rest of the City's investment portfolio. The report tabulated the total amount of under-payments at $111.5 million, and the total loss in value to the portfolio (including the $111.5 million and adding anticipated investment gains) at $305.4 million as of November 1, 2017. In other words, prior under-payments by the City account for approximately 30% of the current pension deficit.

Because of this history, there is an argument that the City should consider making contributions to the pension fund in excess of the ARC going forward, as part of a global solution to resolve the pension problem once and for all. Some of today's taxpayers may have paid less in the past as a result, but there is no easy way to match the underpayments with particular taxpayers; therefore, it will be a general obligation of the City's. With that said, any extra contribution by the City will be constrained by the multiple financial challenges described at pages 7-9 above, and this increased participation will be only part of a solution that will require the involvement of many others.

4. Monetization of Providence Water

Last year, the City presented a proposal to the General Assembly to regionalize Providence Water, which currently provides water directly to customers in four Rhode Island communities,[33] and indirectly (through wholesale purchases) to at least seven more.[34] The City did not propose selling the water system to a private vendor; instead, the proposal contemplated continued ownership and management by a public or quasi-public body. Such a transaction

---

adjusted the ongoing payments as of 1996 to include an extra amount for the under-payments of 1989-96.

33 Providence, North Providence, Cranston and parts of Johnston.

34 Greenville Water, the City of East Providence, Town of Smithfield, Lincoln Water, Kent County Water, Bristol Water, City of Warwick, and Town of Johnston.

would allow the City to realize proceeds that could be invested directly into the pension fund. According to a 2017 report by MRV Valuation Consulting, Inc. ("MRV Report"), the physical plant of Providence Water had a replacement value of slightly over $400 million as of March 31, 2017 after taking depreciation into account.

Providence offered the General Assembly different justifications for this transaction. The first is historical. The Providence water supply was originally built and paid for by Providence taxpayers, but it now provides its water to a State-wide customer base at uniform rates set by the Public Utilities Commission. Unlike a private utility, the Public Utilities Commission does not allow Providence to derive a rate of return on its equity in the system. While this arrangement makes sense when the public owner of the water system is identical to the users, the same is not true when one public body (namely Providence) built and paid for the original system, and the system serves a much wider body of users.

The City also argued that regionalization (i.e. combining the Providence water supply customer base with other State water supplies) could lead to more uniform rates, including reductions in some communities.[35] Finally, the City has argued that if the pension problem is not resolved, the water supply may be disposed of in court proceedings in a manner that is not in the best interest either of the City of Providence or the State as a whole.

Representatives from other parts of the State opposed this plan, viewing their current access to the high-quality, cut-rate (*see* n. 33) Providence water as an entitlement. (Also, some Providence residents are concerned about how such a transaction would affect water quality, although there appear to be adequate ways to protect this.) Exhibit 10 contains projections of the

---

[35] In a recent survey by MR Value Consulting, the average annual bill for 100 cubic feet of water was $431 in Providence, $545 in Pawtucket, $717 in Kent County and $810 in Newport. *See* MRV Report, p. 15.

impact of a $250 million payment[36] from other water users, which clearly provides a significant "down payment" on the problem provided these objections can be overcome, immediately raising the funded ratio to close to 50% and reducing the ARC by around $20 million to start, savings which more than double in the "out years." With that said, the infusion of $250 million in additional funds from an external source is far from a complete solution to the current deficit.

5. Combinations

The actuary runs presented here measure the benefits from applying one of several possible tools. While combining the tools in a package will close the deficit further than any individual tool, the benefits of combination are not strictly additive. With that said, it is clear that any sustainable solution likely will have to combine some version of many, if not most of the available tools just listed. Each of these components may face strong opposition from an affected group (such as existing employees, retirees, taxpayers) and/or from the State, but this working group is unable to develop a realistic solution if it is limited to what else is available.

6. Other tools

The City's authority to increase its pension contribution is limited by the Paiva-Weed Act, R.I.G.L. §44-5-2(b), which caps the annual growth of the City's tax levy at 4%. For fiscal 2018-19, the Internal Auditor estimated that the increased ARC alone will claim 1.5% of a tax levy increase, almost half of what is permitted under Paiva-Weed. If the City chose to "flatten out" its ARC payments over time by increasing the amount currently paid, the Paiva-Weed tax cap would become a barrier, not just a limitation. For those reasons, the working group recommends the City seek a permanent Paiva-Weed exemption for contributions to the pension

[36] At the time the City requested this run from the actuary (March, 2016), it did not know the actual value of the water supply. Since that time, the City commissioned the MRV Report and learned that the actual value of the water supply is $400 million as of March 31, 2017.

fund. In addition or alternatively, the City currently enters into a number of tax treaties with some property owners (such as National Grid) that are not counted as part of the levy until the expiration of the treaty. It would be helpful if the State law provided room for a transition of these treaties to the tax rolls without imposing an immediate "hit" for revenue the City already receives through the treaty.

IV. Conclusion and Recommendations

The City's pension fund has been in "critical" condition for decades, and the current schedule of required payments is a recipe for disaster. There are no rabbits to pull out of this hat, and the problem only grows more expensive and painful with each passing year of inaction.

There is a basis for hope. While each stakeholder has a particular, deeply felt reason to deny responsibility for this problem, oppose any solution they believe will balance the pension budget "on their back" and argue that someone else should be asked (or required) to resolve it, all of them hold a stake in the City's well-being, and all of them will suffer from the consequences of the City's financial ruin. For that reason, one can envision a "grand bargain" in which all stakeholders participate on the premises that (a) everyone else is contributing their fair share, and (b) the City will fail without full participation. This Report identifies some important tools that can become part of such a discussion.

This working group proposes that the City Council and administration commit to funding the pension to a minimum level of 60% within ten years, i.e. by June 30, 2028. The working group proposes that the City develop, no later than September 30, 2018, an engagement campaign to solicit stakeholder input, and submit by December 31, 2018, a working plan that will achieve that goal.

The working group invites the Finance Committee, the City Council, all stakeholders and the general public to contribute their ideas to this effort. We have tried to present all the potential solutions we could find, but welcome your suggestions about alternatives we have missed. With that said, the City is past the point of engaging in denying a serious and imminent reality. The members of this working group would be pleased and grateful to provide any assistance we can to advance these fundamental and essential reforms.

Thank you for your consideration.

<u>Exhibits to Pension Working Group Report</u>
(under separate cover)

1. Segal Consulting, Providence Employees Retirement System, July 1, 2016 Valuation, Funding Schedule.

2. Internal Auditor "Funding Pensions in Providence", November 1, 2017.

3. Segal Consulting, Providence Employees Retirement System, July 1, 2015 Valuation, Funding Schedule.

4. Segal Consulting, Providence Employees Retirement System, July 1, 2015 Valuation, Funding Schedule 7.

5. Segal Consulting, Providence Employees Retirement System, July 1, 2015 Valuation, Funding Schedule 5

6. Segal Consulting, Providence Employees Retirement System, July 1, 2015 Valuation, Funding Schedule 1.

7. Segal Consulting, Providence Employees Retirement System, July 1, 2015 Valuation, Funding Schedule 11.

8. Segal Consulting, Providence Employees Retirement System, July 1, 2015 Valuation, Funding Schedule 12.

9. Wainwright Investment Counsel LLC, Analysis of Non-Funded ARC Payments Fiscal Years 1997 through 2016.

10. Segal Consulting, Providence Employees Retirement System, July 1, 2015 Valuation, Funding Schedule 19.

Exhibits to Pension Working Group Report

1. Segal Consulting, Providence Employees Retirement System, July 1, 2016 Valuation, Funding Schedule.

2. Internal Auditor “Funding Pensions in Providence”, November 1, 2017.

3. Segal Consulting, Providence Employees Retirement System, July 1, 2015 Valuation, Funding Schedule.

4. Segal Consulting, Providence Employees Retirement System, July 1, 2015 Valuation, Funding Schedule 7.

5. Segal Consulting, Providence Employees Retirement System, July 1, 2015 Valuation, Funding Schedule 5

6. Segal Consulting, Providence Employees Retirement System, July 1, 2015 Valuation, Funding Schedule 1.

7. Segal Consulting, Providence Employees Retirement System, July 1, 2015 Valuation, Funding Schedule 11.

8. Segal Consulting, Providence Employees Retirement System, July 1, 2015 Valuation, Funding Schedule 12.

9. Wainwright Investment Counsel LLC, Analysis of Non-Funded ARC Payments Fiscal Years 1997 through 2016.

10. Segal Consulting, Providence Employees Retirement System, July 1, 2015 Valuation, Funding Schedule 19.

EXHIBIT 1

Chart 16

Funding Schedule

(1) Fiscal Year Ended June 30:	(2) Employer Normal Cost	(3) Amortization of Deferral Liability	(4) Amortization of Remaining Unfunded Liability	(5) Total Plan Cost (2)+(3)+(4)	(6) Increase	(7) Payroll	(8) Contributions as a % of Payroll	(9) Actuarial Accrued Liability	(10) Actuarial Value of Assets	(11) Total Unfunded Actuarial Accrued Liability	(12) Funded Ratio
2017	$8,227,681	$464,222	$64,525,640	$73,217,543	- -	$143,311,247	51.09%	$1,330,301,262	$349,094,429	$981,206,833	26.24%
2018	8,547,462	464,222	69,111,434	73,123,118	6.70%	148,327,141	52.67%	1,348,918,484	351,046,577	997,871,907	26.02%
2019	8,879,598	464,222	74,013,547	83,357,367	6.70%	153,518,591	54.30%	1,374,898,780	361,770,831	1,013,127,948	26.31%
2020	9,224,565	464,222	78,038,532	87,727,319	5.24%	158,891,741	55.21%	1,402,309,978	374,109,969	1,028,200,009	26.68%
2021	9,582,854	464,222	81,139,262	91,186,338	3.94%	164,452,952	55.45%	1,431,291,348	394,633,864	1,036,657,484	27.57%
2022	9,954,980	464,222	83,979,136	94,398,338	3.52%	170,208,806	55.46%	1,461,430,903	423,444,305	1,037,986,598	28.97%
2023	10,341,471	464,222	86,918,406	97,724,099	3.52%	176,166,114	55.47%	1,493,449,855	456,867,687	1,036,582,168	30.59%
2024	10,742,881	464,222	89,960,550	101,167,653	3.52%	182,331,928	55.49%	1,526,687,509	494,561,395	1,032,126,114	32.39%
2025	11,159,784	464,222	93,109,170	104,733,175	3.52%	188,713,545	55.50%	1,560,472,969	536,201,537	1,024,271,432	34.36%
2026	11,592,772	464,222	96,367,991	108,424,984	3.52%	195,318,519	55.51%	1,595,026,138	582,386,383	1,012,639,755	36.51%
2027	12,042,464	464,222	99,740,870	112,247,555	3.53%	202,154,667	55.53%	1,630,439,002	633,620,278	996,818,724	38.86%
2028	12,509,503	464,222	103,231,801	116,205,525	3.53%	209,230,081	55.54%	1,666,862,660	690,503,529	976,359,131	41.43%
2029	12,994,554	464,222	106,844,914	120,303,689	3.53%	216,553,134	55.55%	1,704,375,468	753,603,628	950,771,840	44.22%
2030	13,498,305	464,222	110,584,486	124,547,013	3.53%	224,132,493	55.57%	1,743,357,720	823,833,268	919,524,452	47.26%
2031	14,021,478	464,222	114,454,943	128,940,643	3.53%	231,977,131	55.58%	1,783,909,168	901,871,467	882,037,701	50.56%
2032	14,564,816	0	118,460,866	133,025,682	3.17%	240,096,330	55.41%	1,826,426,960	988,745,409	837,681,551	54.14%
2033	15,129,094	0	122,606,996	137,736,090	3.54%	248,499,702	55.43%	1,871,596,461	1,085,361,252	786,235,209	57.99%
2034	15,715,113	0	126,898,241	142,613,354	3.54%	257,197,191	55.45%	1,919,840,374	1,193,313,344	726,527,030	62.16%
2035	16,323,709	0	131,339,679	147,663,388	3.54%	266,199,093	55.47%	1,971,852,573	1,314,101,621	657,750,952	66.64%
2036	16,955,745	0	135,936,568	152,892,313	3.54%	275,516,061	55.49%	2,028,168,389	1,449,137,040	579,031,349	71.45%
2037	17,612,123	0	140,694,348	158,306,471	3.54%	285,159,123	55.52%	2,089,475,492	1,600,058,203	489,417,289	76.58%
2038	18,293,773	0	145,618,650	163,912,423	3.54%	295,139,693	55.54%	2,156,299,321	1,768,422,997	387,876,324	82.01%
2039	19,001,666	0	150,715,303	169,716,969	3.54%	305,469,582	55.56%	2,229,557,848	1,956,270,068	273,287,780	87.74%
2040	19,736,806	0	155,990,338	175,727,144	3.54%	316,161,017	55.58%	2,309,620,982	2,165,185,482	144,435,500	93.75%
2041	20,500,237	0	0	20,500,237	-88.33%	327,226,653	6.26%	2,397,279,288	2,397,279,288	0	100.00%

Notes: Fiscal 2017, 2018 and 2019 contributions set at budgeted amounts.
Recommended contributions are assumed to paid on June 30. If the contribution is made after June 30, Segal will calculate the additional interest charge based on the date of payment.
Item (2) reflects 3.5% growth in payroll as well as a 0.15% adjustment to total normal cost to reflect the effects of mortality improvements due to the generational mortality assumption.
Amortization payments of remaining unfunded liability increase at 3.5% per year beginning with fiscal year 2020.
Projected unfunded actuarial accrued liability reflects deferred investment losses. Recognizing deferred investment losses means the System is anticipating investment losses on an actuarial basis.
Normal cost is projected based on plan of benefits of current employees and does not reflect different benefits for new hires, if applicable.

EXHIBIT 2

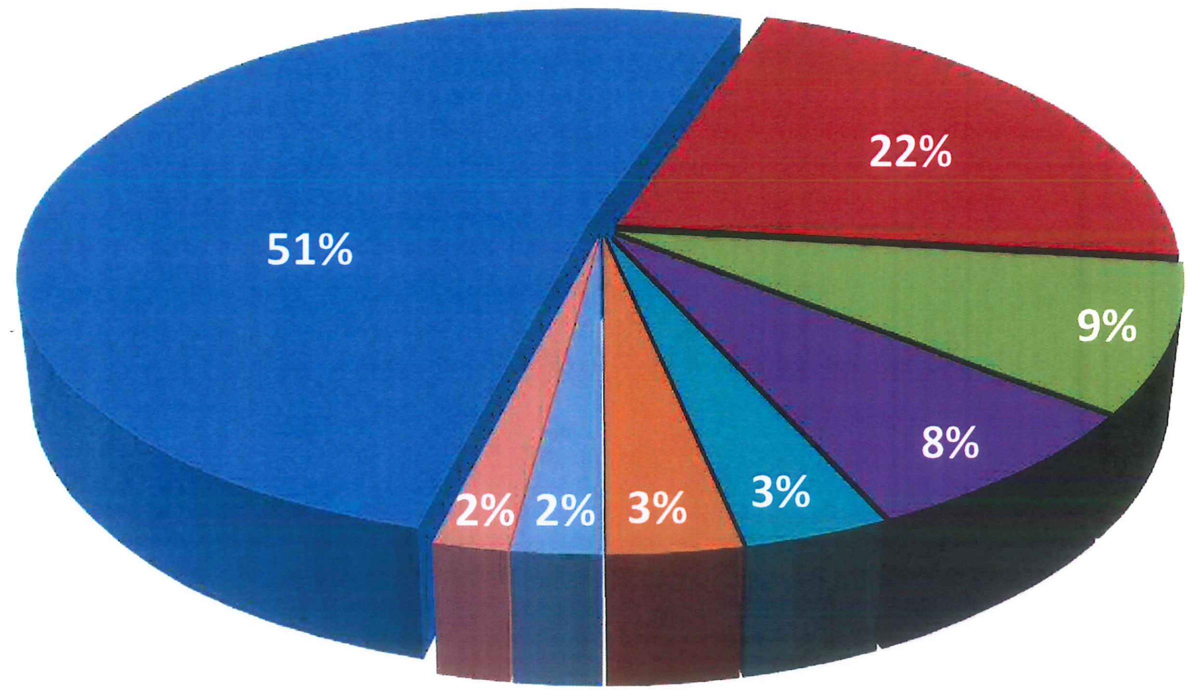
Funding Pensions in Providence

Office of the Internal Auditor

November 1, 2017

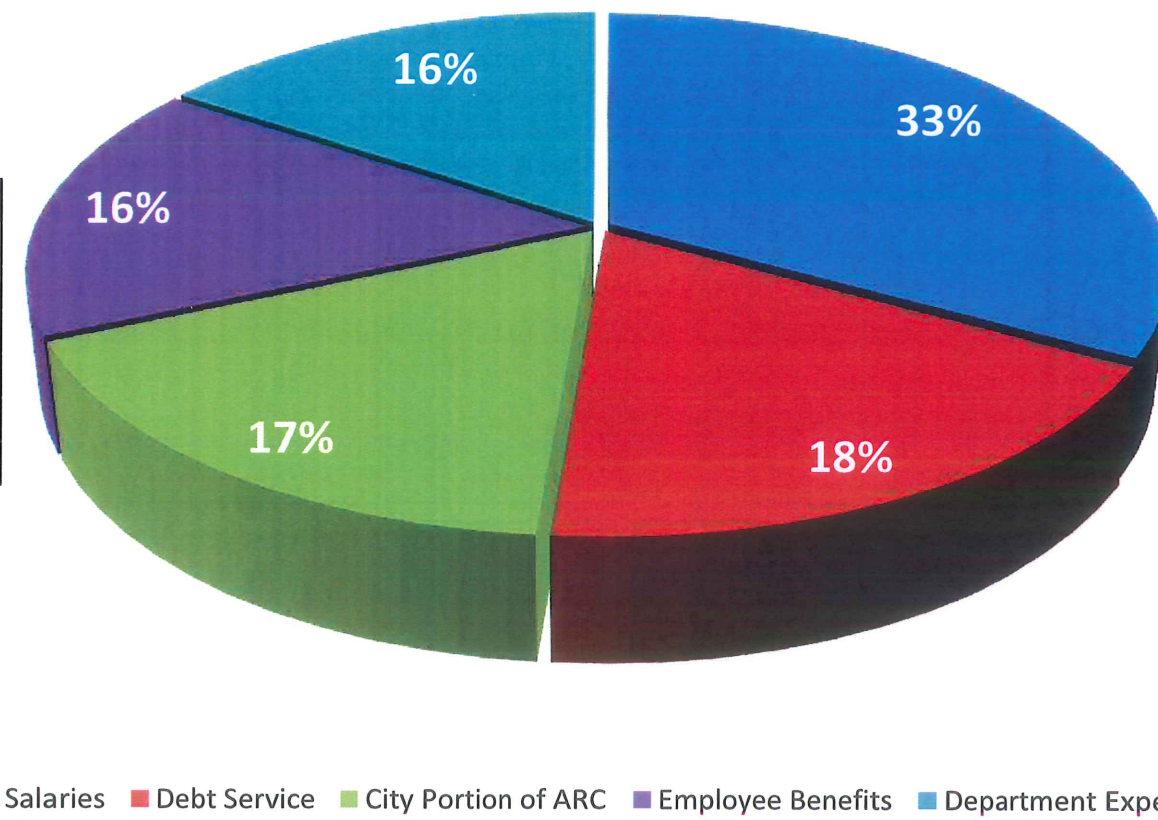
FY2018 Budgeted Expenditures
City & School

FY2018 Budgeted Expenditures (City & School)	
School Department	$377,970,703
Public Safety	$159,291,646
Debt Service	$65,145,540
Grants & Commissions	$55,829,748
Retiree Benefits	$25,587,987
Public Works	$23,793,055
Parks & Recreation	$15,859,458
Other	$13,315,469
	$736,793,606



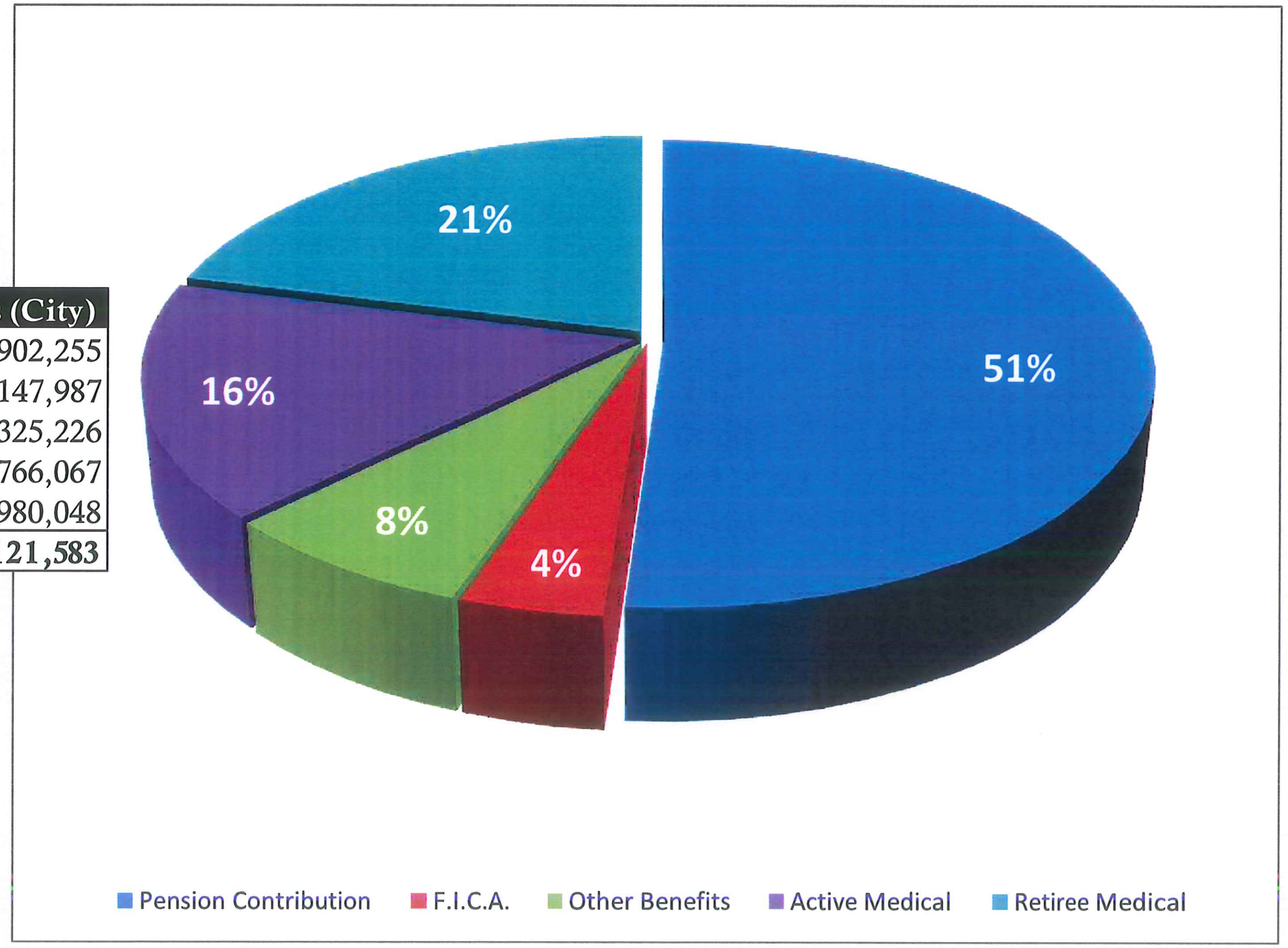
FY2018 Budgeted Expenditures
City

FY2018 General Fund Budgeted Expenses	
Salaries	$118,726,032
Debt Service	$65,145,540
City Portion of ARC	$60,902,255
Employee Benefits	$58,219,328
Department Expenses	$55,829,748
	$358,822,903



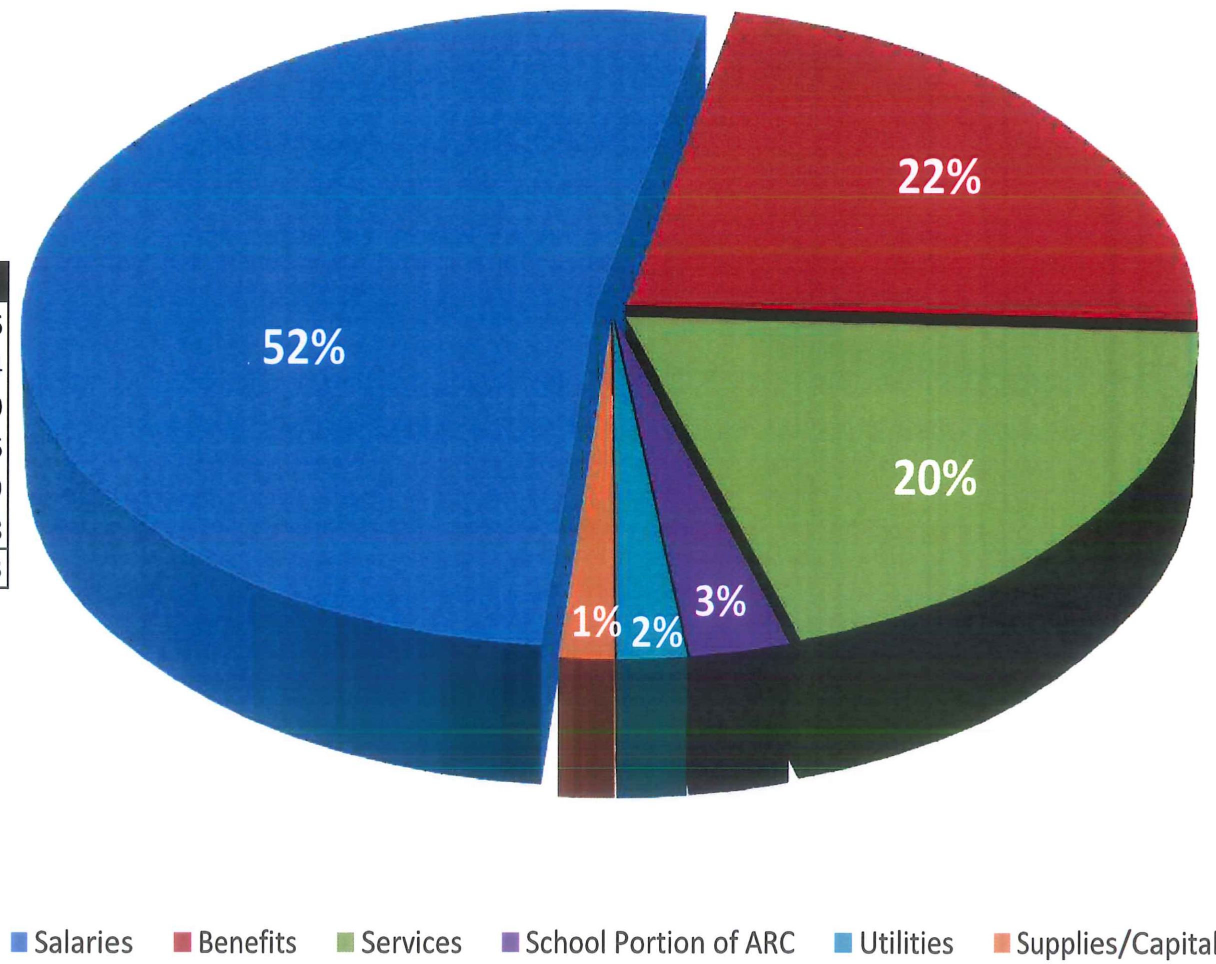
FY2018 Budgeted Employee Benefits
City

FY2018 Budgeted Employee Benefits (City)	
Pension Contribution	$60,902,255
Retiree Medical	$25,147,987
Active Medical	$19,325,226
Other Benefits	$8,766,067
FICA	$4,980,048
	$119,121,583



FY2018 Budgeted Expenditures
School Department

FY2018 Budgeted Expenditures (School)	
Salaries	$196,007,596
Benefits	$84,864,814
Services	$74,123,160
School Portion of ARC	$10,176,316
Utilities	$7,122,269
Supplies/Capital	$5,676,548
	$377,970,703



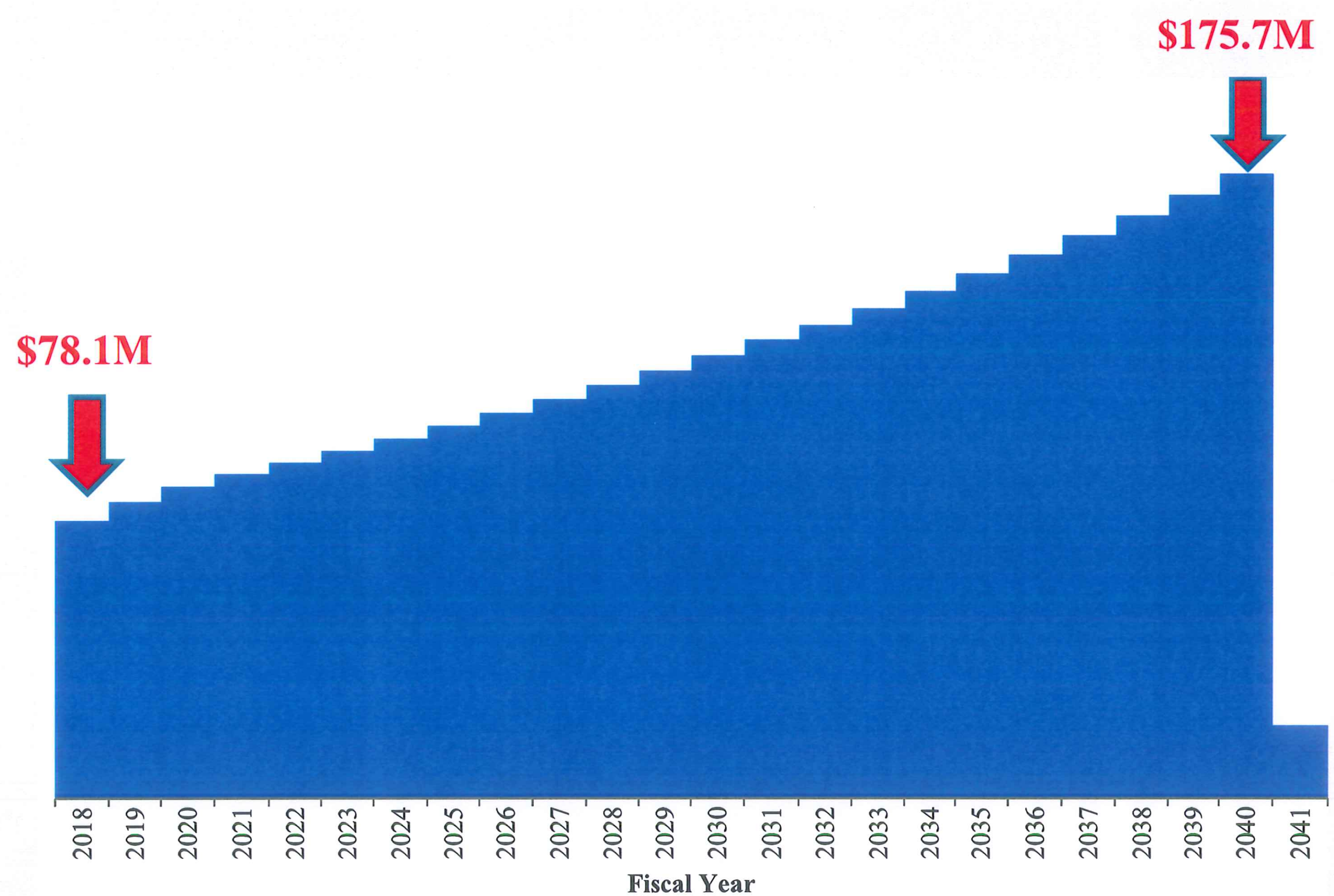
Budget Projections
FY2018 - 2022

Description	FY 2018 Approved Budget	FY2019 Projected Budget	FY2020 Projected Budget	FY2021 Projected Budget	FY2022 Projected Budget
Projected Revenue - City	$487,369,514	$503,436,273	$502,354,742	$511,103,664	$520,247,099
Projected Revenue - School	$249,424,092	$246,768,043	$248,118,043	$249,118,043	$250,118,043
Total Revenue	**$736,793,606**	**$750,204,316**	**$750,472,785**	**$760,221,707**	**$770,365,142**
Projected Expenditures - City	$358,822,903	$362,873,473	$364,857,178	$370,717,446	$379,562,274
Projected Expenditures - School	$377,970,703	$391,946,374	$406,319,154	$420,291,041	$435,753,879
Total Expenditures	**$736,793,606**	**$754,819,847**	**$771,176,332**	**$791,008,487**	**$815,316,153**
Proj. Budget Surplus/(Deficit)	**$0**	**($4,615,531)**	**($20,703,547)**	**($30,786,780)**	**($44,951,011)**

Source: Administration's Five-Year Budget Projection Report (FY2019 - FY2022)

Projected Annual Required Contribution (ARC) 2018-2041

Fiscal Year	Total City Annual Required Contribution (ARC)
2018	$78,123,118
2019	$83,357,367
2020	$87,727,319
2021	$91,186,338
2022	$94,398,338
2023	$97,724,099
2024	$101,167,653
2025	$104,733,175
2026	$108,424,984
2027	$112,247,556
2028	$116,205,525
2029	$120,303,689
2030	$124,547,013
2031	$128,940,643
2032	$133,025,682
2033	$137,736,090
2034	$142,613,354
2035	$147,663,388
2036	$152,892,313
2037	$158,306,471
2038	$163,912,423
2039	$169,716,969
2040	$175,727,144
2041	$20,500,237



- *Source: Segal Consulting "Actuarial Evaluation and Review of Employee Retirement System of the City of Providence, July 1, 2016"*
- *At an Investment Rate of Return of 8.0%, Providence's Annual Required Contribution (ARC) to the Employees' Retirement System is forecasted to increase from $78.1 million in fiscal 2018 to $175.7 million in fiscal 2040.*

Projected ARC Funding as % Levy & Budget

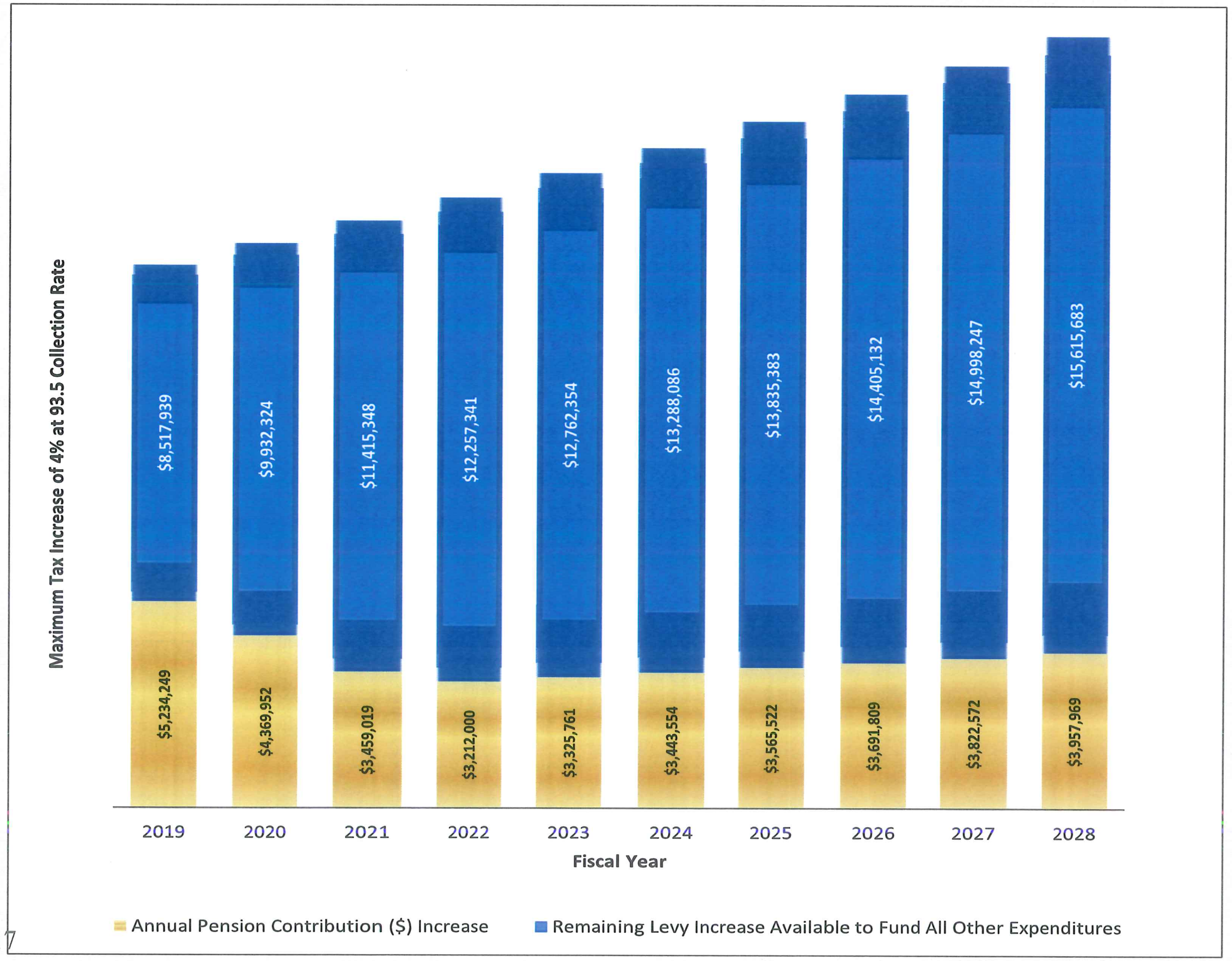
Fiscal Year	Maximum Levy Increase Allowed By Law (4.0%)	Portion of Levy Increase ($) Required to Fund ARC (93.5% Collection Rate)	Remaining Levy Increase Available to Fund All Other Expenditures (4.0%)	Percentage of Levy Increase Required to Fund ARC	ARC as Percentage of City Budget
2019	$13,752,188	$5,234,249	$8,517,939	38.06%	11.11%
2020	$14,302,276	$4,369,952	$9,932,324	24.81%	11.69%
2021	$14,874,367	$3,459,019	$11,415,348	25.01%	11.99%
2022	$15,469,341	$3,212,000	$12,257,341	25.21%	12.25%
2023	$16,088,115	$3,325,761	$12,762,354	25.42%	

In FY2019 the Annual Required Contribution (ARC) is projected to represent 11.11% of the total City budget.

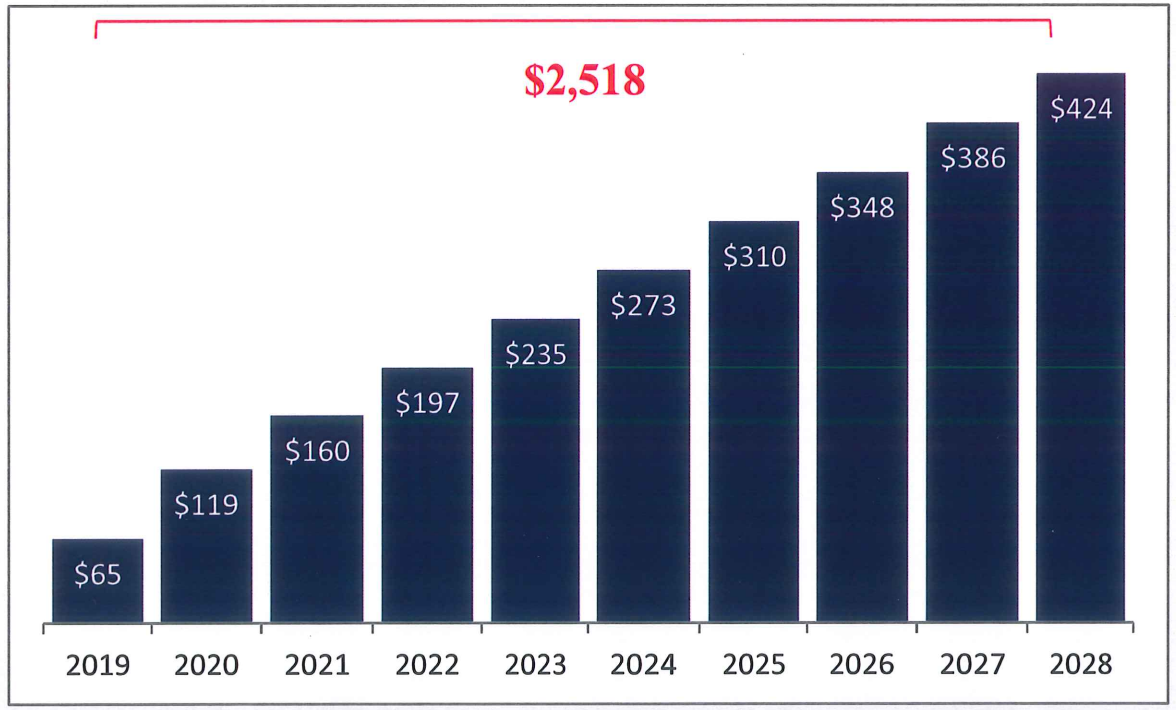
38.06% of the maximum levy increase (4.0%) is required to fund the increase to the ARC.

FY2019 ARC is larger due predominantly to phase-in of financial impact from lowering of the assumed rate of return to 8.00%.

Maximum 4.0% Levy Increases



Tax Increases to Fund ARC
Owner-occupied Residential: 2019-2028



- The average tax bill in FY2018 for an owner-occupied residential property is $4,369. This is based upon an average citywide assessed value of $232,378 for a single family property and a tax rate of $18.80 per thousand.

- If real estate taxes were raised annually to meet only the projected increase to the city's ARC payment, the average annual tax bill would increase by $424 (+ 9.7%) by FY2028.

- Cumulatively, between fiscal years 2019 through 2028, a homeowner would pay an additional $2,518 in real estate taxes just to fund the ARC.

Tax Increases to Fund ARC
Non-owner occupied Residential: 2019-2027

Four Family Property

Four Family Property

- The average tax bill in FY2018 for a non-owner occupied residential property is $8,043. This is based upon an average citywide assessed value of $251,662 for a four family property and a tax rate of $31.96 per thousand.
- If real estate taxes were raised annually to meet only the projected increase to the city's ARC payment, the average annual tax bill would increase by $782 (+ 9.7%) by FY2028.
- Cumulatively, between fiscal years 2019 through 2027, a homeowner would pay an additional $4,641 in real estate taxes just to fund the ARC.

Tax Increases to Fund ARC
Non-owner occupied Residential: 2019-2027

Three Family Property

Three Family Property

- The average tax bill in FY2018 for a non-owner occupied residential property is $5,649. This is based upon an average citywide assessed value of $176,750 for a three family property and a tax rate of $31.96 per thousand.

- If real estate taxes were raised annually to meet only the projected increase to the city's ARC payment, the average annual tax bill would increase by $549 (+ 9.7%) by FY2028.

- Cumulatively, between fiscal years 2019 through 2027, a homeowner would pay an additional $3,259 in real estate taxes just to fund the ARC.

Tax Increases to Fund ARC
Retail Business "A": 2019-2027

- Retail Business "A" has an annual real estate tax bill of $14,834.
- If real estate taxes were raised annually to meet only the projected increase to the city's ARC payment, Retail Business "A" would see its annual tax bill increase by $1,442 (+ 9.7%) by FY2028.
- Cumulatively, between fiscal years 2019 through 2028, Retail Business "A" would pay an additional $8,558 in real estate taxes just to fund the ARC.

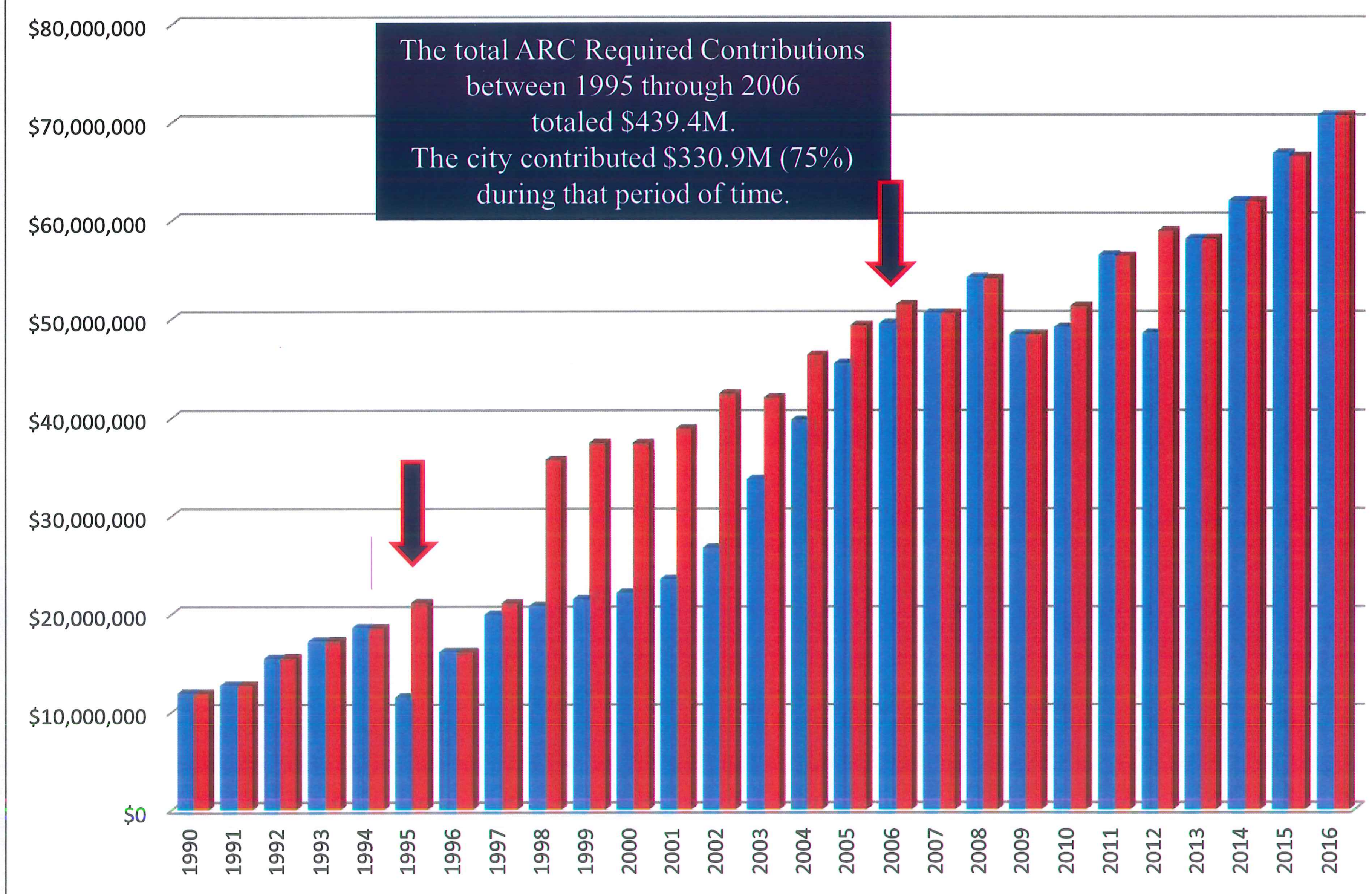
History of Pension Contributions : 1990-2016

FY	ARC	Actual Contribution	Variance ($)	% of ARC Contributed
1990	$11,900,000	$11,900,000	$0	100.00%
1991	$12,726,000	$12,726,000	$0	100.00%
1992	$15,522,000	$15,466,000	($56,000)	100.36%
1993	$17,243,000	$17,221,000	($22,000)	100.13%
1994	$18,593,000	$18,612,000	$19,000	99.90%
1995	$21,159,000	$11,489,647	($9,669,353)	184.16%
1996	$16,136,000	$16,136,000	$0	100.00%
1997	$21,089,000	$19,929,469	($1,159,531)	105.82%
1998	$35,701,000	$20,824,075	($14,876,925)	171.44%
1999	$37,445,000	$21,520,861	($15,924,139)	173.99%
2000	$37,415,000	$22,169,639	($15,245,361)	168.77%
2001	$38,899,000	$23,571,512	($15,327,488)	165.03%
2002	$42,442,000	$26,761,006	($15,680,994)	158.60%
2003	$42,008,000	$33,765,510	($8,242,490)	124.41%
2004	$46,321,000	$39,765,475	($6,555,525)	116.49%
2005	$49,329,000	$45,455,000	($3,874,000)	108.52%
2006	$51,454,000	$49,510,000	($1,944,000)	103.93%
2007	$50,584,000	$50,584,000	$0	100.00%
2008	$54,120,000	$54,199,966	$79,966	99.85%
2009	$48,410,000	$48,409,864	($136)	100.00%
2010	$51,299,000	$49,122,875	($2,176,125)	104.43%
2011	$56,380,000	$56,493,791	$113,791	99.80%
2012	$58,929,000	$48,545,134	($10,383,866)	121.39%
2013	$58,145,000	$58,144,513	($487)	100.00%
2014	$62,000,000	$62,000,000	$0	100.00%
2015	$66,543,967	$66,847,315	$303,348	99.55%
2016	$70,704,335	$70,704,335	$0	100.00%
	$1,092,497,302	**$971,874,987**	**($120,622,315)**	**88.96%**

Amounts shown for 1990 through 1994 are rounded.

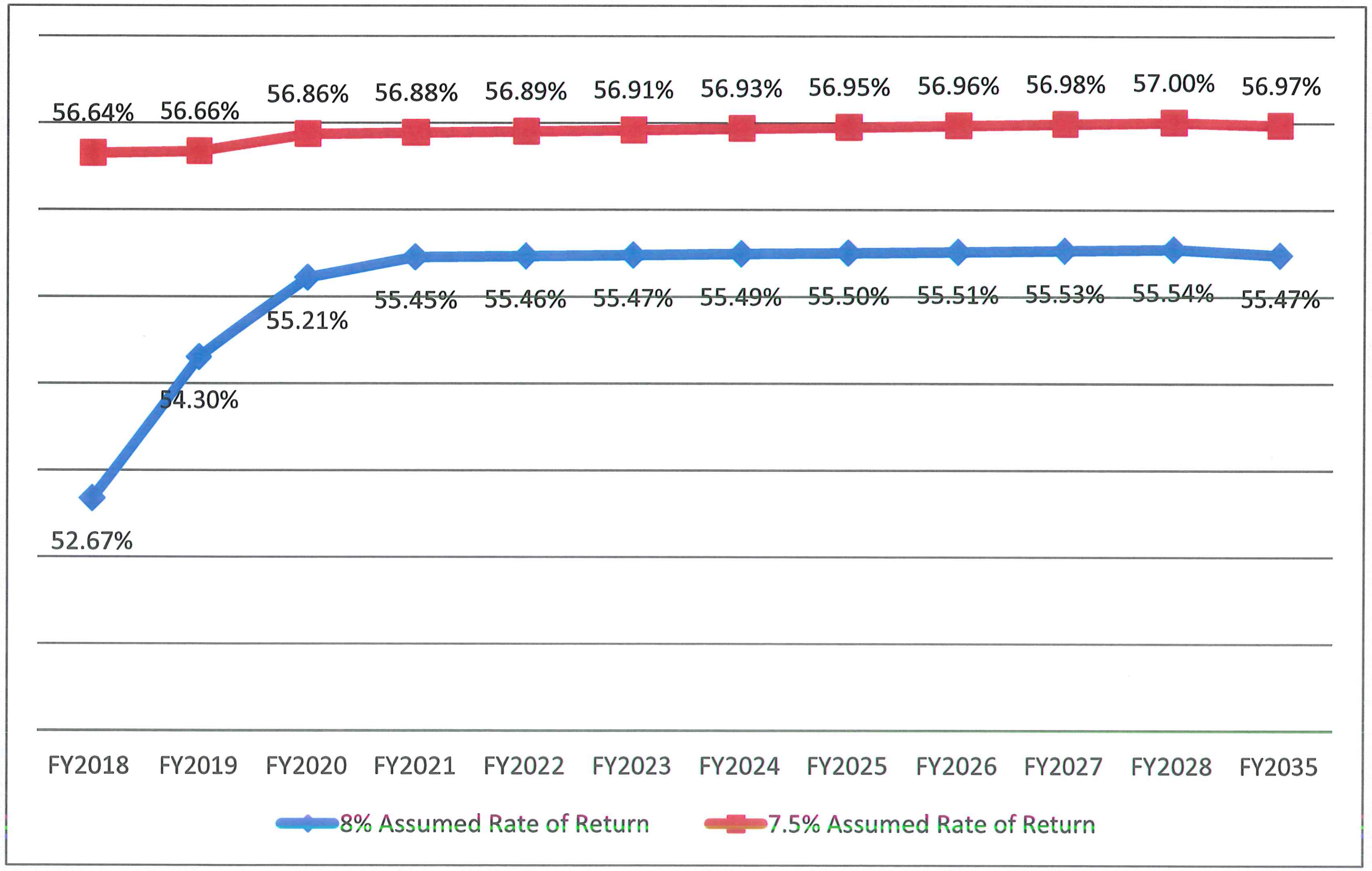
The city made approximately 89% of the total required contributions to the retirement system during the period 1990 through 2016.

History of Pension Contributions : 1990-2016



11/2/2017

ARC as a % of Payroll
8.0% and 7.5% Assumed Rate of Returns



Funded Ratio Comparison

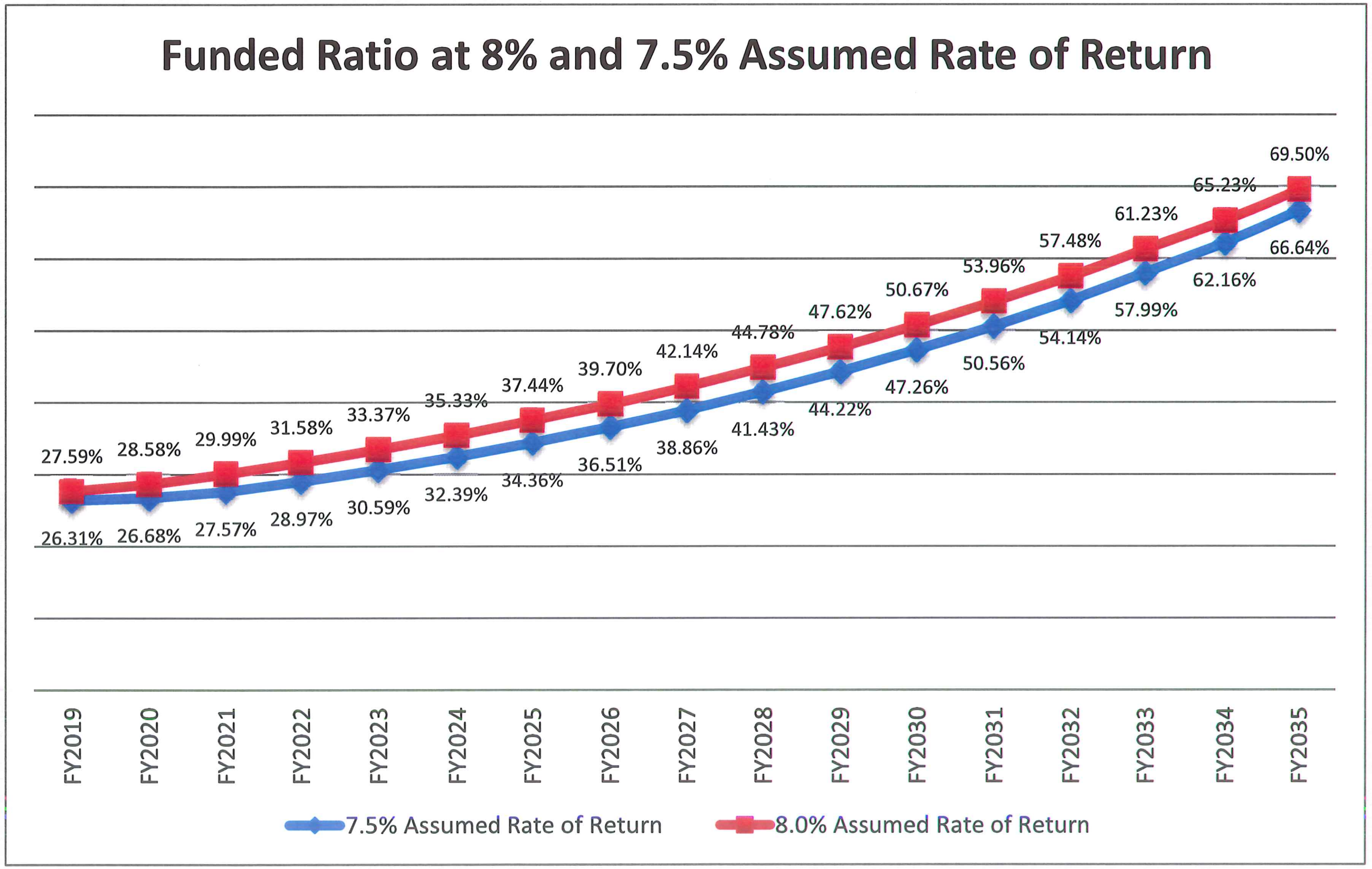


EXHIBIT 3

CHART 16
Funding Schedule

(1) Fiscal Year Ended June 30	(2) Employer Normal Cost	(3) Amortization of Deferral Liability	(4) Amortization of Remaining Unfunded Liability	(5) Total Plan Cost: (2) + (3) + (4)	(6) Increase	(7) Payroll	(8) Contributions as a % of Payroll: (5) / (7)	As of Beginni (9) Actuarial Accrued Liability	(10) Actuarial Valu of Assets
2015	$7,125,364	$471,667	$58,946,936	$66,543,967	- -	$142,503,824	46.70%	$1,232,590,168	$338,253,329
2016	7,374,752	471,667	63,012,448	70,858,867	6.48%	147,491,458	48.04%	1,247,645,496	349,018,453
2017	7,632,868	471,667	65,113,008	73,217,543	3.33%	152,653,659	47.96%	1,270,651,256	362,827,394
2018	7,900,018	471,667	66,951,673	75,323,358	2.88%	157,996,537	47.67%	1,294,535,584	383,367,778
2019	8,176,519	471,667	69,027,132	77,675,318	3.12%	163,526,416	47.50%	1,319,430,313	404,052,232
2020	8,462,697	471,667	71,443,081	80,377,445	3.48%	169,249,840	47.49%	1,345,118,038	423,720,065
2021	8,758,891	471,667	73,943,589	83,174,147	3.48%	175,173,585	47.48%	1,372,195,660	446,697,103
2022	9,065,452	471,667	76,531,615	86,068,734	3.48%	181,304,660	47.47%	1,400,748,057	473,311,125
2023	9,382,743	471,667	79,210,221	89,064,631	3.48%	187,650,323	47.46%	1,431,131,690	504,184,493
2024	9,711,139	471,667	81,982,579	92,165,385	3.48%	194,218,085	47.45%	1,462,485,865	538,747,413
2025	10,051,029	471,667	84,851,969	95,374,665	3.48%	201,015,718	47.45%	1,494,202,907	576,710,279
2026	10,402,815	471,667	87,821,788	98,696,270	3.48%	208,051,268	47.44%	1,526,485,441	618,623,308
2027	10,766,914	471,667	90,895,551	102,134,132	3.48%	215,333,062	47.43%	1,559,589,130	665,121,826
2028	11,143,756	471,667	94,076,895	105,692,318	3.48%	222,869,719	47.42%	1,593,896,062	717,002,423
2029	11,533,787	471,667	97,369,586	109,375,040	3.48%	230,670,159	47.42%	1,629,545,770	774,856,968
2030	11,937,470	471,667	100,777,522	113,186,659	3.48%	238,743,615	47.41%	1,666,973,682	839,614,307
2031	12,355,281	471,667	104,304,735	117,131,683	3.49%	247,099,641	47.40%	1,706,361,019	911,993,685
2032	12,787,716	- -	107,955,401	120,743,117	3.08%	255,748,129	47.21%	1,748,191,956	993,065,718
2033	13,235,286	- -	111,733,840	124,969,126	3.50%	264,699,313	47.21%	1,793,202,183	1,083,733,431
2034	13,698,521	- -	115,644,524	129,343,045	3.50%	273,963,789	47.21%	1,841,888,926	1,185,622,842
2035	14,177,969	- -	119,692,083	133,870,052	3.50%	283,552,522	47.21%	1,895,064,122	1,300,300,610
2036	14,674,198	- -	123,881,306	138,555,504	3.50%	293,476,860	47.21%	1,953,315,631	1,429,176,212
2037	15,187,795	- -	128,217,151	143,404,946	3.50%	303,748,550	47.21%	2,017,444,866	1,573,945,251
2038	15,719,368	- -	132,704,752	148,424,120	3.50%	314,379,750	47.21%	2,088,082,561	1,736,211,379
2039	16,269,546	- -	137,349,418	153,618,964	3.50%	325,383,041	47.21%	2,166,307,945	1,918,112,142
2040	16,838,980	- -	142,156,648	158,995,628	3.50%	336,771,447	47.21%	2,252,701,735	2,121,379,196
2041	17,428,344	- -	- -	17,428,344	-89.04%	348,558,448	5.00%	2,348,330,975	2,348,330,975

Notes: Recommended contributions are assumed to be paid on June 30. If the contribution is made after June 30, Segal will calculate the additional interest charge
Normal cost and amortization payments of remaining unfunded liability increase at 3.5% per year.
Assumes contribution of budgeted amount for fiscal year 2015.
Schedule reflects deferred investment gains.

EXHIBIT 4

Funding Schedule 7 – Increase employee contributions to 10% of pay effective July 1, 2018

(1) Fiscal Year Ended June 30	(2) Employer Normal Cost	(3) Amortization of Deferral Liability	(4) Amortization of Remaining Unfunded Liability	(5) Total Plan Cost: (2) + (3) + (4)	(6) Increase	(7) Payroll	(8) Contributions as a % of Payroll: (5) / (7)	As of Beg (9) Actuarial Accrued Liability	(10 Actuarial of Ass
2015	$7,125,364	$471,667	$58,946,936	$66,543,967	- -	$142,503,824	46.70%	$1,232,590,168	$338,25
2016	7,374,752	471,667	63,012,448	70,858,867	6.48%	147,491,458	48.04%	1,247,645,496	349,01
2017	7,632,868	471,667	65,113,008	73,217,543	3.33%	152,653,659	47.96%	1,270,651,256	362,82
2018	7,900,018	471,667	66,951,673	75,323,358	2.88%	157,996,537	47.67%	1,294,535,584	383,36
2019	4,804,043	471,667	69,027,132	74,302,842	-1.35%	163,526,416	45.44%	1,319,430,313	404,05
2020	4,972,185	471,667	71,443,081	76,886,933	3.48%	169,249,840	45.43%	1,344,986,985	423,58
2021	5,146,211	471,667	73,943,589	79,561,467	3.48%	175,173,585	45.42%	1,371,885,981	446,38
2022	5,326,328	471,667	76,531,615	82,329,610	3.48%	181,304,660	45.41%	1,400,210,304	472,77
2023	5,512,750	471,667	79,210,221	85,194,638	3.48%	187,650,323	45.40%	1,430,321,702	503,37
2024	5,705,697	471,667	81,982,579	88,159,943	3.48%	194,218,085	45.39%	1,461,353,031	537,61
2025	5,905,396	471,667	84,851,969	91,229,032	3.48%	201,015,718	45.38%	1,492,697,312	575,20
2026	6,112,085	471,667	87,821,788	94,405,540	3.48%	208,051,268	45.38%	1,524,555,297	616,69
2027	6,326,008	471,667	90,895,551	97,693,226	3.48%	215,333,062	45.37%	1,557,198,544	662,73
2028	6,547,418	471,667	94,076,895	101,095,980	3.48%	222,869,719	45.36%	1,590,986,791	714,09
2029	6,776,578	471,667	97,369,586	104,617,831	3.48%	230,670,159	45.35%	1,626,054,935	771,36
2030	7,013,758	471,667	100,777,522	108,262,947	3.48%	238,743,615	45.35%	1,662,847,955	835,48
2031	7,259,240	471,667	104,304,735	112,035,642	3.48%	247,099,641	45.34%	1,701,539,620	907,17
2032	7,513,314	- -	107,955,401	115,468,715	3.06%	255,748,129	45.15%	1,742,586,741	987,46
2033	7,776,280	- -	111,733,840	119,510,120	3.50%	264,699,313	45.15%	1,786,729,815	1,077,26
2034	8,048,450	- -	115,644,524	123,692,974	3.50%	273,963,789	45.15%	1,834,464,350	1,178,19
2035	8,330,145	- -	119,692,083	128,022,228	3.50%	283,552,522	45.15%	1,886,636,860	1,291,87
2036	8,621,700	- -	123,881,306	132,503,006	3.50%	293,476,860	45.15%	1,943,803,882	1,419,66
2037	8,923,460	- -	128,217,151	137,140,611	3.50%	303,748,550	45.15%	2,006,736,119	1,563,23
2038	9,235,781	- -	132,704,752	141,940,533	3.50%	314,379,750	45.15%	2,076,096,207	1,724,22
2039	9,559,033	- -	137,349,418	146,908,451	3.50%	325,383,041	45.15%	2,152,952,318	1,904,75
2040	9,893,600	- -	142,156,647	152,050,247	3.50%	336,771,447	45.15%	2,237,875,310	2,106,55
2041	10,239,876	- -	- -	10,239,876	-93.27%	348,558,448	2.94%	2,331,916,140	2,331,91

Notes: *Recommended contributions are assumed to be paid on June 30. If the contribution is made after June 30, Segal will calculate the additional interest charge based on the d*
Normal cost is projected on a closed group basis by assuming a 3.5% increase per year.
Amortization payments of remaining unfunded liability increase at 3.5% per year.
Assumes contribution of budgeted amount for fiscal year 2015.
Schedule reflects deferred investment gains.
Participants who opted out of the Consent of Judgments regarding the resumption of retiree COLAs are assumed to have their COLAs commence on January 1, 2036.

EXHIBIT 5

Funding Schedule 5 – Freeze defined benefit plan effective July 1, 2018 and replace with a 2% employer contribution to a – Class A and B

(1) Fiscal Year Ended June 30	(2) Employer Normal Cost	(3) Amortization of Deferral Liability	(4) Amortization of Remaining Unfunded Liability	(5) Defined Benefit Plan Cost (2) + (3) + (4)	(6) 2% Defined Contribution Cost	(7) Total Plan Cost: (2) + (3) + (4) + (5) + (6)	(8) Increase	(9) Payroll	(10) Contributions as a % of Payroll: (7) / (9)	As of (11) Actuarial Accrued Liability	Ac
2015	$7,125,364	$471,667	$58,946,936	$66,543,967	- -	$66,543,967	- -	$142,503,824	46.70%	$1,232,590,168	$
2016	7,374,752	471,667	63,012,448	70,858,867	- -	70,858,867	6.48%	147,491,458	48.04%	1,247,645,496	
2017	7,632,869	471,667	65,113,008	73,217,544	- -	73,217,544	3.33%	152,653,659	47.96%	1,270,651,256	
2018	7,900,019	471,667	66,951,673	75,323,359	- -	75,323,359	2.88%	157,996,537	47.67%	1,294,535,584	
2019	- -	471,667	69,027,132	69,498,798	$3,270,528	72,769,327	-3.39%	163,526,416	44.50%	1,319,430,313	
2020	- -	471,667	71,443,081	71,914,748	3,384,997	75,299,745	3.48%	169,249,840	44.49%	1,326,475,418	
2021	- -	471,667	73,943,589	74,415,256	3,503,472	77,918,728	3.48%	175,173,585	44.48%	1,333,858,652	
2022	- -	471,667	76,531,615	77,003,282	3,626,093	80,629,375	3.48%	181,304,660	44.47%	1,341,782,238	
2023	- -	471,667	79,210,221	79,681,888	3,753,006	83,434,895	3.48%	187,650,323	44.46%	1,350,648,356	
2024	- -	471,667	81,982,579	82,454,246	3,884,362	86,338,607	3.48%	194,218,085	44.45%	1,359,769,212	
2025	- -	471,667	84,851,969	85,323,636	4,020,314	89,343,950	3.48%	201,015,718	44.45%	1,368,629,529	
2026	- -	471,667	87,821,788	88,293,455	4,161,025	92,454,480	3.48%	208,051,268	44.44%	1,377,475,346	
2027	- -	471,667	90,895,551	91,367,218	4,306,661	95,673,879	3.48%	215,333,062	44.43%	1,386,587,976	
2028	- -	471,667	94,076,895	94,548,562	4,457,394	99,005,956	3.48%	222,869,719	44.42%	1,396,284,086	
2029	- -	471,667	97,369,586	97,841,253	4,613,403	102,454,656	3.48%	230,670,159	44.42%	1,406,774,523	
2030	- -	471,667	100,777,522	101,249,189	4,774,872	106,024,061	3.48%	238,743,615	44.41%	1,418,418,466	
2031	- -	471,667	104,304,735	104,776,402	4,941,993	109,718,395	3.48%	247,099,641	44.40%	1,431,493,414	
2032	- -	- -	107,955,401	107,955,401	5,114,963	113,070,363	3.06%	255,748,129	44.21%	1,446,346,064	
2033	- -	- -	111,733,840	111,733,840	5,293,986	117,027,826	3.50%	264,699,313	44.21%	1,463,431,376	
2034	- -	- -	115,644,524	115,644,524	5,479,276	121,123,800	3.50%	273,963,789	44.21%	1,483,157,512	
2035	- -	- -	119,692,083	119,692,083	5,671,050	125,363,133	3.50%	283,552,522	44.21%	1,505,987,695	
2036	- -	- -	123,881,305	123,881,305	5,869,537	129,750,843	3.50%	293,476,860	44.21%	1,532,345,458	1
2037	- -	- -	128,217,151	128,217,151	6,074,971	134,292,122	3.50%	303,748,550	44.21%	1,562,703,866	1
2038	- -	- -	132,704,751	132,704,751	6,287,595	138,992,346	3.50%	314,379,750	44.21%	1,597,534,288	1
2039	- -	- -	137,349,418	137,349,418	6,507,661	143,857,078	3.50%	325,383,041	44.21%	1,637,427,939	1
2040	- -	- -	142,156,647	142,156,647	6,735,429	148,892,076	3.50%	336,771,447	44.21%	1,682,947,364	1
2041	- -	- -	- -	- -	6,971,169	6,971,169	-95.32%	348,558,448	2.00%	1,734,752,837	1

Notes: *Recommended contributions are assumed to be paid on June 30. If the contribution is made after June 30, Segal will calculate the additional interest charge based on the d*
Normal cost is projected on a closed group basis by assuming a 3.5% increase per year.
Amortization payments of remaining unfunded liability increase at 3.5% per year.
Assumes contribution of budgeted amount for fiscal year 2015.
Schedule reflects deferred investment gains.
Participants who opted out of the Consent of Judgments regarding the resumption of retiree COLAs are assumed to have their COLAs commence on January 1, 2036.

EXHIBIT 6

Funding Schedule 1 – COLA freeze until 60% funded (January 1, 2034)

								As of Beginning of Fiscal Year			
(1) Fiscal Year Ended June 30	(2) Employer Normal Cost	(3) Amortization of Deferral Liability	(4) Amortization of Remaining Unfunded Liability	(5) Total Plan Cost: (2) + (3) + (4)	(6) Increase	(7) Payroll	(8) Contributions as a % of Payroll: (5) / (7)	(9) Actuarial Accrued Liability	(10) Actuarial Value of Assets	(11) Total Unfunded Accrued Liability	(12) Funded Ratio
2015	$6,377,020	$471,667	$59,695,280	$66,543,967	- -	$142,503,824	46.70%	$1,169,874,063	$338,253,329	$831,620,734	28.91%
2016	6,600,216	471,667	63,786,984	70,858,867	6.48%	147,491,458	48.04%	1,179,006,911	349,018,395	829,988,516	29.60%
2017	6,831,224	471,667	59,704,566	67,007,457	-5.44%	152,653,659	43.90%	1,195,575,323	362,827,202	832,748,121	30.35%
2018	7,070,317	471,667	61,353,936	68,895,919	2.82%	157,996,537	43.61%	1,212,464,136	377,157,377	835,306,759	31.11%
2019	7,317,778	471,667	63,233,473	71,022,918	3.09%	163,526,416	43.43%	1,229,758,287	390,902,053	838,856,234	31.79%
2020	7,573,900	471,667	65,446,645	73,492,211	3.48%	169,249,840	43.42%	1,247,189,278	402,832,545	844,356,733	32.30%
2021	7,838,987	471,667	67,737,277	76,047,931	3.48%	175,173,585	43.41%	1,265,298,796	417,200,944	848,097,852	32.97%
2022	8,113,352	471,667	70,108,082	78,693,101	3.48%	181,304,660	43.40%	1,284,112,004	434,255,024	849,856,980	33.82%
2023	8,397,319	471,667	72,561,865	81,430,851	3.48%	187,650,323	43.39%	1,303,920,812	454,530,380	849,390,432	34.86%
2024	8,691,225	471,667	75,101,530	84,264,422	3.48%	194,218,085	43.39%	1,324,644,967	478,213,356	846,431,611	36.10%
2025	8,995,418	471,667	77,730,084	87,197,168	3.48%	201,015,718	43.38%	1,346,515,718	505,826,696	840,689,022	37.57%
2026	9,310,258	471,667	80,450,636	90,232,561	3.48%	208,051,268	43.37%	1,369,832,345	537,988,229	831,844,116	39.27%
2027	9,636,117	471,667	83,266,409	93,374,193	3.48%	215,333,062	43.36%	1,394,942,152	575,393,200	819,548,952	41.25%
2028	9,973,381	471,667	86,180,733	96,625,781	3.48%	222,869,719	43.36%	1,422,315,489	618,891,824	803,423,665	43.51%
2029	10,322,449	471,667	89,197,059	99,991,175	3.48%	230,670,159	43.35%	1,452,178,845	669,125,128	783,053,717	46.08%
2030	10,683,735	471,667	92,318,956	103,474,358	3.48%	238,743,615	43.34%	1,485,053,232	727,066,309	757,986,923	48.96%
2031	11,057,666	471,667	95,550,119	107,079,452	3.48%	247,099,641	43.33%	1,521,206,967	793,476,746	727,730,221	52.16%
2032	11,444,684	- -	98,894,373	110,339,057	3.04%	255,748,129	43.14%	1,561,204,149	869,457,970	691,746,179	55.69%
2033	11,845,248	- -	102,355,676	114,200,924	3.50%	264,699,313	43.14%	1,605,866,117	955,945,252	649,920,865	59.53%
2034	12,259,832	- -	105,938,125	118,197,957	3.50%	273,963,789	43.14%	1,655,774,160	1,054,590,500	601,183,660	63.69%
2035	12,688,926	- -	109,645,959	122,334,885	3.50%	283,552,522	43.14%	1,710,931,665	1,166,088,478	544,843,187	68.16%
2036	13,133,038	- -	113,483,568	126,616,606	3.50%	293,476,860	43.14%	1,771,082,734	1,290,935,944	480,146,790	72.89%
2037	13,592,694	- -	117,455,493	131,048,187	3.50%	303,748,550	43.14%	1,836,986,891	1,430,711,559	406,275,332	77.88%
2038	14,068,438	- -	121,566,435	135,634,873	3.50%	314,379,750	43.14%	1,909,228,413	1,586,890,859	322,337,554	83.12%
2039	14,560,833	- -	125,821,260	140,382,093	3.50%	325,383,041	43.14%	1,988,834,198	1,761,470,231	227,363,967	88.57%
2040	15,070,462	- -	130,225,005	145,295,467	3.50%	336,771,447	43.14%	2,076,329,884	1,956,029,650	120,300,234	94.21%
2041	15,597,928	- -	- -	15,597,928	-89.26%	348,558,448	4.47%	2,172,718,287	2,172,718,287	- -	100.00%

Notes: Recommended contributions are assumed to be paid on June 30. If the contribution is made after June 30, Segal will calculate the additional interest charge based on the date of payment.
Normal cost is projected on a closed group basis by assuming a 3.5% increase per year.
Amortization payments of remaining unfunded liability increase at 3.5% per year.
Assumes contribution of budgeted amount for fiscal year 2015.
Schedule reflects deferred investment gains.
Participants who opted out of the Consent of Judgments regarding the resumption of retiree COLAs are assumed to have their COLAs commence on January 1, 2036.

EXHIBIT 7

Funding Schedule 11 – Reduce monthly benefits above $2,000 5% effective July 1, 2018

								As of Beginning of Fiscal Year			
(1) Fiscal Year Ended June 30	(2) Employer Normal Cost	(3) Amortization of Deferral Liability	(4) Amortization of Remaining Unfunded Liability	(5) Total Plan Cost: (2) + (3) + (4)	(6) Increase	(7) Payroll	(8) Contributions as a % of Payroll: (5) / (7)	(9) Actuarial Accrued Liability	(10) Actuarial Value of Assets	(11) Total Unfunded Accrued Liability	(12) Funded Ratio
2015	$7,125,364	$471,667	$58,946,936	$66,543,967	- -	$142,503,824	46.70%	$1,232,590,168	$338,253,329	$894,336,839	27.44%
2016	7,374,752	471,667	63,012,448	70,858,867	6.48%	147,491,458	48.04%	1,247,645,496	349,018,453	898,627,043	27.97%
2017	7,632,869	471,667	65,113,008	73,217,544	3.33%	152,653,659	47.96%	1,270,651,256	362,827,394	907,823,862	28.55%
2018	7,900,019	471,667	66,951,673	75,323,359	2.88%	157,996,537	47.67%	1,294,535,584	383,367,779	911,167,805	29.61%
2019	7,574,415	471,667	63,672,747	71,718,828	-4.79%	163,526,416	43.86%	1,248,710,333	404,052,234	844,658,099	32.36%
2020	7,839,520	471,667	65,901,293	74,212,480	3.48%	169,249,840	43.85%	1,271,895,366	421,697,388	850,197,978	33.16%
2021	8,113,904	471,667	68,207,838	76,793,409	3.48%	175,173,585	43.84%	1,296,323,288	442,356,937	853,966,351	34.12%
2022	8,397,891	471,667	70,595,112	79,464,670	3.48%	181,304,660	43.83%	1,322,061,349	466,322,279	855,739,070	35.27%
2023	8,691,818	471,667	73,065,941	82,229,426	3.48%	187,650,323	43.82%	1,349,444,804	494,174,040	855,270,764	36.62%
2024	8,996,031	471,667	75,623,249	85,090,947	3.48%	194,218,085	43.81%	1,377,652,062	525,359,068	852,292,994	38.13%
2025	9,310,891	471,667	78,270,063	88,052,621	3.48%	201,015,718	43.80%	1,406,100,687	559,588,437	846,512,250	39.80%
2026	9,636,772	471,667	81,009,515	91,117,954	3.48%	208,051,268	43.80%	1,434,979,548	597,371,767	837,607,781	41.63%
2027	9,974,060	471,667	83,844,848	94,290,575	3.48%	215,333,062	43.79%	1,464,521,453	639,292,212	825,229,241	43.65%
2028	10,323,152	471,667	86,779,418	97,574,237	3.48%	222,869,719	43.78%	1,495,083,513	686,089,375	808,994,138	45.89%
2029	11,348,132	471,667	89,816,697	101,636,496	4.16%	230,670,159	44.06%	1,526,785,912	738,300,843	788,485,069	48.36%
2030	11,058,418	471,667	92,960,282	104,490,367	2.81%	238,743,615	43.77%	1,560,697,622	797,450,899	763,246,723	51.10%
2031	11,445,463	471,667	96,213,892	108,131,022	3.48%	247,099,641	43.76%	1,595,716,811	862,934,182	732,782,629	54.08%
2032	11,846,054	- -	99,581,378	111,427,432	3.05%	255,748,129	43.57%	1,632,898,309	936,346,671	696,551,638	57.34%
2033	12,260,666	- -	103,066,726	115,327,392	3.50%	264,699,313	43.57%	1,672,935,843	1,018,500,073	654,435,770	60.88%
2034	12,689,789	- -	106,674,062	119,363,851	3.50%	273,963,789	43.57%	1,716,297,621	1,110,937,626	605,359,995	64.73%
2035	13,133,932	- -	110,407,654	123,541,586	3.50%	283,552,522	43.57%	1,763,750,185	1,215,122,052	548,628,133	68.89%
2036	13,593,620	- -	114,271,922	127,865,542	3.50%	293,476,860	43.57%	1,815,824,505	1,332,342,205	483,482,300	73.37%
2037	14,069,396	- -	118,271,439	132,340,835	3.50%	303,748,550	43.57%	1,873,268,890	1,464,171,222	409,097,668	78.16%
2038	14,561,826	- -	122,410,939	136,972,765	3.50%	314,379,750	43.57%	1,936,670,329	1,612,093,542	324,576,787	83.24%
2039	15,071,489	- -	126,695,322	141,766,811	3.50%	325,383,041	43.57%	2,007,032,655	1,778,089,222	228,943,433	88.59%
2040	15,598,992	- -	131,129,658	146,728,650	3.50%	336,771,447	43.57%	2,084,896,500	1,963,760,556	121,135,944	94.19%
2041	16,144,957	- -	- -	16,144,957	-89.00%	348,558,448	4.63%	2,171,241,359	2,171,241,359	- -	100.00%

Notes: Recommended contributions are assumed to be paid on June 30. If the contribution is made after June 30, Segal will calculate the additional interest charge based on the date of payment.
Normal cost is projected on a closed group basis by assuming a 3.5% increase per year.
Amortization payments of remaining unfunded liability increase at 3.5% per year.
Assumes contribution of budgeted amount for fiscal year 2015.
Schedule reflects deferred investment gains.
Participants who opted out of the Consent of Judgments regarding the resumption of retiree COLAs are assumed to have their COLAs commence on January 1, 2036.

EXHIBIT 8

Funding Schedule 12 – Reduce monthly benefits above $2,000 10% effective July 1, 2018

								As of Beg	
(1) Fiscal Year Ended June 30	(2) Employer Normal Cost	(3) Amortization of Deferral Liability	(4) Amortization of Remaining Unfunded Liability	(5) Total Plan Cost: (2) + (3) + (4)	(6) Increase	(7) Payroll	(8) Contributions as a % of Payroll: (5) / (7)	(9) Actuarial Accrued Liability	(10 Actuarial of Ass
2015	$7,125,364	$471,667	$58,946,936	$66,543,967	- -	$142,503,824	46.70%	$1,232,590,168	$338,25
2016	7,374,752	471,667	63,012,448	70,858,867	6.48%	147,491,458	48.04%	1,247,645,496	349,01
2017	7,632,869	471,667	65,113,008	73,217,544	3.33%	152,653,659	47.96%	1,270,651,256	362,82
2018	7,900,019	471,667	66,951,673	75,323,359	2.88%	157,996,537	47.67%	1,294,535,584	383,36
2019	6,971,918	471,667	58,328,630	65,772,215	-12.68%	163,526,416	40.22%	1,178,125,980	404,05
2020	7,215,935	471,667	60,370,132	68,057,734	3.47%	169,249,840	40.21%	1,198,818,496	419,68
2021	7,468,493	471,667	62,483,087	70,423,247	3.48%	175,173,585	40.20%	1,220,602,586	438,03
2022	7,729,891	471,667	64,669,995	72,871,553	3.48%	181,304,660	40.19%	1,243,532,638	459,35
2023	8,000,437	471,667	66,933,445	75,405,549	3.48%	187,650,323	40.18%	1,267,923,826	484,19
2024	8,280,452	471,667	69,276,115	78,028,234	3.48%	194,218,085	40.18%	1,292,981,584	511,99
2025	8,570,267	471,667	71,700,779	80,742,713	3.48%	201,015,718	40.17%	1,318,164,685	542,49
2026	8,870,227	471,667	74,210,307	83,552,201	3.48%	208,051,268	40.16%	1,343,636,376	576,14
2027	9,180,685	471,667	76,807,667	86,460,019	3.48%	215,333,062	40.15%	1,369,614,989	613,49
2028	9,502,009	471,667	79,495,936	89,469,612	3.48%	222,869,719	40.14%	1,396,424,379	655,19
2029	10,498,250	471,667	82,278,293	93,248,210	4.22%	230,670,159	40.42%	1,424,173,052	701,76
2030	10,178,791	471,667	85,158,034	95,808,492	2.75%	238,743,615	40.13%	1,453,897,523	754,64
2031	10,535,048	471,667	88,138,565	99,145,280	3.48%	247,099,641	40.12%	1,484,487,296	813,17
2032	10,903,775	- -	91,223,415	102,127,190	3.01%	255,748,129	39.93%	1,516,944,869	878,85
2033	11,285,407	- -	94,416,234	105,701,641	3.50%	264,699,313	39.93%	1,551,935,927	952,42
2034	11,680,396	- -	97,720,802	109,401,198	3.50%	273,963,789	39.93%	1,589,859,057	1,035,30
2035	12,089,211	- -	101,141,030	113,230,241	3.50%	283,552,522	39.93%	1,631,473,555	1,128,89
2036	12,512,333	- -	104,680,967	117,193,300	3.50%	293,476,860	39.93%	1,677,235,151	1,234,33
2037	12,950,265	- -	108,344,800	121,295,065	3.50%	303,748,550	39.93%	1,727,845,570	1,353,08
2038	13,403,524	- -	112,136,868	125,540,392	3.50%	314,379,750	39.93%	1,783,863,454	1,486,52
2039	13,872,648	- -	116,061,659	129,934,307	3.50%	325,383,041	39.93%	1,846,208,231	1,636,48
2040	14,358,190	- -	120,123,817	134,482,007	3.50%	336,771,447	39.93%	1,915,374,266	1,804,40
2041	14,860,728	- -	- -	14,860,728	-88.95%	348,558,448	4.26%	1,992,269,057	1,992,26

Notes: Recommended contributions are assumed to be paid on June 30. If the contribution is made after June 30, Segal will calculate the additional interest charge based on the d
Normal cost is projected on a closed group basis by assuming a 3.5% increase per year.
Amortization payments of remaining unfunded liability increase at 3.5% per year.
Assumes contribution of budgeted amount for fiscal year 2015.
Schedule reflects deferred investment gains.
Participants who opted out of the Consent of Judgments regarding the resumption of retiree COLAs are assumed to have their COLAs commence on January 1, 2036.

EXHIBIT 9

WAINWRIGHT
INVESTMENT
COUNSEL, LLC

Analysis of Non-Funded ARC Payments
Fiscal Years 1997 through 2016

Prepared for

The City of Providence Employees Retirement System

Submitted by

Wainwright Investment Counsel, LLC
One Boston Place
Boston, MA 02108

on

November 1, 2017

ONE BOSTON PLACE
BOSTON, MA 02108

TEL: 617.531.3100
FAX: 617.531.3140

WINVCOUNSEL.COM

The information provided herein, including, but not limited to, historical performance and descriptive strategy information, was obtained from third party managers and/or custodians independent of and not affiliated with Wainwright Investment Counsel, LLC or its affiliates ("Wainwright") and has not been independently audited or verified by Wainwright. The information was gathered from sources deemed to be reliable; however, no assurance is made as to the accuracy of the data or information. Wainwright urges clients to compare the information in this report to the information received from third party managers and/or custodians and report any material discrepancies to both parties.

This summary and information provided herein does not constitute an offer to sell or a solicitation of an offer to buy any securities and may not be used or relied upon in connection with any offer or sale of securities. This summary is qualified in its entirety by, among other things, the disclosures incorporated in any investment management agreement and the disclaimers included therein.

Past performance is never a guarantee of future investment results. Actual results may vary. Performance figures contained herein should be considered estimated and unaudited unless otherwise noted. As a result of market activity since the date of this report, current performance may be different from that shown.

The following applies to all of the indices referenced in this document: Unless otherwise noted, indices are presented merely to show general trends in the markets for the period and are not intended to imply that the portfolio is benchmarked to the indices either in composition or level of risk. The indices are unmanaged, may or may not be investable, have no expenses (*i.e.,* are gross of fees) and reflect reinvestment of dividends and distributions. Index data is provided for comparative purposes only. A variety of factors may cause an index to be an inaccurate benchmark for a particular investment within the portfolio and the index does not necessarily reflect the actual investment strategy of the portfolio.

Unless otherwise noted herein, *consolidated client performance,* is presented net of investment manager fees. With regard to the calculation of the *consolidated client performance,* performance is presented net of Wainwright's advisory fees (if applicable) through the end of the previous calendar quarter being reported. *Consolidated client performance* for the current calendar quarter being reported may or may not be presented net of Wainwright's advisory fees, as disclosed herein. *Individual component (e.g., manager) and asset class performance* is presented net of investment manager fees and, as disclosed herein, may or may not be net of Wainwright's advisory fees. Where *consolidated client performance* (for the current quarter) or *individual manager performance* does not include Wainwright's advisory fees (if applicable), the actual net performance at that level would be lower had Wainwright's advisory fees been deducted.

Wainwright makes no guarantee that your investment objectives will be achieved. The investment results presented may exclude certain recommendations made by Wainwright that were not accepted by a client or, alternately, may include investment decisions made by a client without a recommendation by Wainwright. You recognize that any recommendations provided by Wainwright, involve Wainwright's judgment and that Wainwright's views regarding the economy, the securities markets or other specialized areas, like all predictions of future events, cannot be guaranteed to be accurate. The information herein reflects prevailing conditions and Wainwright's judgments as of this date, all of which are subject to change without notice.

Investing in securities involves the potential for a risk of loss that clients should be prepared to bear. The investment performance and the success of any investment strategy or particular investment can never be predicted or guaranteed, and the value of a client's investments will fluctuate due to market conditions and other factors. Investments may lose value and past performance is never a guarantee of future results.

Additional information is available upon request.

DISCLAIMER

The information contained herein is provided for informational and discussion purposes only and is not, and may not be relied on, in any manner, as legal, tax, accounting or regulatory advice nor does this constitute an offer to sell or a solicitation of an offer to buy any securities and may not be used or relied upon in connection with any offer or sale of securities.

Wainwright makes no guarantee that your investment objectives will be achieved. The historical performance results shown may reflect actions taken other than those recommended by Wainwright. You recognize that any recommendations provided by Wainwright involve Wainwright's judgment and that Wainwright's views regarding the economy, the securities markets or other specialized areas, like all predictions of future events, cannot be guaranteed to be accurate. The information herein reflects prevailing market conditions and Wainwright's judgment as of this date, all of which are subject to change without notice.

Any financial transaction involves a variety of potential significant risks and issues. Before entering into any financial transaction, you should ensure that you fully understand the terms, have evaluated the risks and have determined that the transaction is appropriate for you in all respects.

Additional information is available upon request.

Hypothetical performance results have many inherent limitations, some of which are described below. No representation is being made that any account will or is likely to achieve profits or losses similar to those shown. In fact, there are frequently sharp differences between hypothetical performance results and the actual results subsequently achieved by any allocation or exposure, including but not limited to the current net exposure.

One of the limitations of hypothetical performance results is that they are generally prepared with the benefit of hindsight. In addition, hypothetical trading does not involve financial risk, and no hypothetical trading record can completely account for the impact of financial risk in actual trading. For example, the ability to withstand losses or to adhere to a particular trading strategy in spite of trading losses are material points which can also adversely affect actual trading results. There are numerous other factors related to the markets in general or to the implementation of any specific trading program which cannot be fully accounted for in the preparation of hypothetical performance results and all of which can adversely affect trading results. The data used to prepare the unaudited, simulated or hypothetical performance figures presented herein was gathered from sources deemed to be reliable; however, no assurance is made as to the accuracy of the data.

No representation is made with respect to the accuracy or completeness of the data set forth herein. As referenced herein, Wainwright has made certain assumptions. There is no assurance that these assumptions will be true or not adversely affect actual results.

The information contained herein is provided for informational and discussion purposes only and does not constitute an offer to sell or a solicitation of an offer to buy any securities and may not be used or relied upon in connection with any offer or sale of securities. This summary is qualified in its entirety by, among other things, the disclosures incorporated in any investment management agreement and the disclaimers included therein.

Analysis of Non-Funded ARC Payments

City of Providence ERS

Fiscal years 1997-2016

Assumptions

1.) Non-funded ARC payments are assumed to have been made on the last day of the same month when actual partial ARC payments were made.
2.) 100% of the non-funded ARC payments were contributed directly to the retirement portfolio and allocated in accordance with the prevailing target allocations.
3.) Rebalancing recommendations and the timing of them are assumed to be unchanged with additional ARC payments.
4.) Overfundings of ARC were ignored and, therefore, do not affect this analysis.
5.) The non-funded ARC payment of $9,669,353 for the fiscal year 1995 was ignored for this analysis because it predated Wainwright Investment Counsel, LLC's engagement and, therefore, no return data for the portfolio is available for that time period.

Notes

1.) Portfolio returns were obtained from State Street Corporation ("State Street").
2.) Data regarding required ARC payments, ARC payments made and ARC payments not made were obtained directly from the Office of the Chief Operating Officer for the City of Providence.

		As Provided by the Office of the Chief Operating Officer for the City of Providence			As Provided and Calculated by State Street Corporation ("State Street")			
FY	**Month**	Total ARC Payment Made	Required ARC Payment	$ Amount of ARC Not Paid = Additional Hypothetical Contribution	Actual ARC Contributions Received by State Street for the Portfolio	Total Net Portfolio Return as Calculated by State Street	**Cumulative Growth of Hypothetical Contribution**	**Comments**
1997	7/31/1996	--	--	$0	$0	-2.21%	$0	
	8/31/1996	--	--	$0	$0	1.95%	$0	According to data provided by the office of the Chief Operating Officer for the City of Providence, the amount of the ARC that was not paid in this fiscal year was $1,159,531. For purposes of this analysis, we assume this amount that was not contributed to be an additional hypothetical contribution in September 1996. Note that there were no ARC payments received by State Street this fiscal year.
	9/30/1996	--	--	$1,159,531	$0	2.47%	$1,159,531	
	10/31/1996	--	--	$0	$0	0.44%	$1,164,581	
	11/30/1996	--	--	$0	$0	3.72%	$1,207,917	
	12/31/1996	--	--	$0	$0	-0.31%	$1,204,167	
	1/31/1997	--	--	$0	$0	3.03%	$1,240,683	
	2/28/1997	--	--	$0	$0	-1.09%	$1,227,218	
	3/31/1997	--	--	$0	$0	-2.24%	$1,199,744	
	4/30/1997	--	--	$0	$0	1.83%	$1,221,658	
	5/31/1997	--	--	$0	$0	5.15%	$1,284,633	
	6/30/1997	--	--	$0	$0	3.03%	$1,323,597	
Total FY 1997		**$19,929,469**	**$21,089,000**	**$1,159,531**	**$0**			
1998	7/31/1997	--	--	$14,876,925	$10,000,000	5.22%	$16,269,576	
	8/31/1997	--	--	$0	$0	-0.72%	$16,152,434	
	9/30/1997	--	--	$0	$0	3.89%	$16,780,430	According to data provided by the office of the Chief Operating Officer for the City of Providence, the amount of the ARC that was not paid in this fiscal year was $14,876,925. For purposes of this analysis, we assume this amount that was not contributed to be an additional hypothetical contribution in July 1997 when a partial ARC payment was received by State Street.
	10/31/1997	--	--	$0	$0	-2.63%	$16,339,328	
	11/30/1997	--	--	$0	$0	0.21%	$16,373,043	
	12/31/1997	--	--	$0	$0	0.78%	$16,499,991	
	1/31/1998	--	--	$0	$0	0.18%	$16,529,899	
	2/28/1998	--	--	$0	$0	4.39%	$17,256,279	
	3/31/1998	--	--	$0	$0	3.05%	$17,782,241	
	4/30/1998	--	--	$0	$0	0.80%	$17,924,845	
	5/31/1998	--	--	$0	$0	-1.89%	$17,586,012	
	6/30/1998	--	--	$0	$0	1.07%	$17,775,027	
Total FY 1998		**$20,824,075**	**$35,701,000**	**$14,876,925**	**$10,000,000**			

Analysis of Non-Funded ARC Payments
City of Providence ERS
Fiscal years 1997-2016

Assumptions
1.) Non-funded ARC payments are assumed to have been made on the last day of the same month when actual partial ARC payments were made.
2.) 100% of the non-funded ARC payments were contributed directly to the retirement portfolio and allocated in accordance with the prevailing target allocations.
3.) Rebalancing recommendations and the timing of them are assumed to be unchanged with additional ARC payments.
4.) Overfundings of ARC were ignored and, therefore, do not affect this analysis.
5.) The non-funded ARC payment of $9,669,353 for the fiscal year 1995 was ignored for this analysis because it predated Wainwright Investment Counsel, LLC's engagement and, therefore, no return data for the portfolio is available for that time period.

Notes
1.) Portfolio returns were obtained from State Street Corporation ("State Street").
2.) Data regarding required ARC payments, ARC payments made and ARC payments not made were obtained directly from the Office of the Chief Operating Officer for the City of Providence.

		As Provided by the Office of the Chief Operating Officer for the City of Providence			As Provided and Calculated by State Street Corporation ("State Street")			
FY	**Month**	Total ARC Payment Made	Required ARC Payment	$ Amount of ARC Not Paid = Additional Hypothetical Contribution	Actual ARC Contributions Received by State Street for the Portfolio	Total Net Portfolio Return as Calculated by State Street	**Cumulative Growth of Hypothetical Contribution**	**Comments**
1999	7/31/1998	--	--	$0	$0	-1.83%	$17,450,270	
	8/31/1998	--	--	$0	$0	-9.45%	$15,800,674	
	9/30/1998	--	--	$15,924,139	$18,000,000	2.55%	$32,127,591	According to data provided by the office of the Chief Operating Officer for the City of Providence, the amount of the ARC that was not paid in this fiscal year was $15,924,139. For purposes of this analysis, we assume this amount that was not contributed to be an additional hypothetical contribution in September 1998 when a partial ARC payment was received by State Street.
	10/31/1998	--	--	$0	$0	3.62%	$33,290,359	
	11/30/1998	--	--	$0	$0	3.95%	$34,603,842	
	12/31/1998	--	--	$0	$0	3.32%	$35,753,518	
	1/31/1999	--	--	$0	$0	1.26%	$36,205,172	
	2/28/1999	--	--	$0	$0	-3.70%	$34,864,711	
	3/31/1999	--	--	$0	$0	2.28%	$35,659,289	
	4/30/1999	--	--	$0	$0	3.23%	$36,810,858	
	5/31/1999	--	--	$0	$0	-1.25%	$36,350,524	
	6/30/1999	--	--	$0	$0	2.95%	$37,422,840	
Total FY 1999		**$21,520,861**	**$37,445,000**	**$15,924,139**	**$18,000,000**			
2000	7/31/1999	--	--	$0	$0	-0.54%	$37,219,766	
	8/31/1999	--	--	$0	$0	-1.58%	$36,629,841	
	9/30/1999	--	--	$15,245,361	$16,000,000	-0.88%	$51,552,135	According to data provided by the office of the Chief Operating Officer for the City of Providence, the amount of the ARC that was not paid in this fiscal year was $15,245,361. For purposes of this analysis, we assume this amount that was not contributed to be an additional hypothetical contribution in September 1999 when a partial ARC payment was received by State Street.
	10/31/1999	--	--	$0	$0	1.57%	$52,363,742	
	11/30/1999	--	--	$0	$0	1.76%	$53,287,165	
	12/31/1999	--	--	$0	$0	4.50%	$55,685,288	
	1/31/2000	--	--	$0	$0	-3.76%	$53,590,407	
	2/29/2000	--	--	$0	$0	2.48%	$54,919,063	
	3/31/2000	--	--	$0	$0	3.89%	$57,057,718	
	4/30/2000	--	--	$0	$0	-2.39%	$55,694,910	
	5/31/2000	--	--	$0	$0	-1.79%	$54,695,727	
	6/30/2000	--	--	$0	$0	3.46%	$56,587,161	
Total FY 2000		**$22,169,639**	**$37,415,000**	**$15,245,361**	**$16,000,000**			

Analysis of Non-Funded ARC Payments
City of Providence ERS
Fiscal years 1997-2016

Assumptions
1.) Non-funded ARC payments are assumed to have been made on the last day of the same month when actual partial ARC payments were made.
2.) 100% of the non-funded ARC payments were contributed directly to the retirement portfolio and allocated in accordance with the prevailing target allocations.
3.) Rebalancing recommendations and the timing of them are assumed to be unchanged with additional ARC payments.
4.) Overfundings of ARC were ignored and, therefore, do not affect this analysis.
5.) The non-funded ARC payment of $9,669,353 for the fiscal year 1995 was ignored for this analysis because it predated Wainwright Investment Counsel, LLC's engagement and, therefore, no return data for the portfolio is available for that time period.

Notes
1.) Portfolio returns were obtained from State Street Corporation ("State Street").
2.) Data regarding required ARC payments, ARC payments made and ARC payments not made were obtained directly from the Office of the Chief Operating Officer for the City of Providence.

		As Provided by the Office of the Chief Operating Officer for the City of Providence			As Provided and Calculated by State Street Corporation ("State Street")			
FY	**Month**	Total ARC Payment Made	Required ARC Payment	$ Amount of ARC Not Paid = Additional Hypothetical Contribution	Actual ARC Contributions Received by State Street for the Portfolio	Total Net Portfolio Return as Calculated by State Street	**Cumulative Growth of Hypothetical Contribution**	**Comments**
2001	7/31/2000	--	--	$0	$0	-1.14%	$55,941,939	
	8/31/2000	--	--	$0	$0	4.86%	$58,661,799	
	9/30/2000	--	--	$15,327,488	$18,000,000	-2.29%	$72,646,635	According to data provided by the office of the Chief Operating Officer for the City of Providence, the amount of the ARC that was not paid in this fiscal year was $15,327,488. For purposes of this analysis, we assume this amount that was not contributed to be an additional hypothetical contribution in September 2000 when a partial ARC payment was received by State Street.
	10/31/2000	--	--	$0	$0	-0.63%	$72,192,211	
	11/30/2000	--	--	$0	$0	-3.88%	$69,390,445	
	12/31/2000	--	--	$0	$0	3.93%	$72,117,975	
	1/31/2001	--	--	$0	$0	1.55%	$73,236,260	
	2/28/2001	--	--	$0	$0	-3.87%	$70,403,010	
	3/31/2001	--	--	$0	$0	-3.09%	$68,224,089	
	4/30/2001	--	--	$0	$0	3.92%	$70,898,808	
	5/31/2001	--	--	$0	$0	0.91%	$71,546,375	
	6/30/2001	--	--	$0	$0	-0.76%	$70,999,185	
Total FY 2001		**$23,571,512**	**$38,899,000**	**$15,327,488**	**$18,000,000**			
2002	7/31/2001	--	--	$0	$0	-0.06%	$70,954,340	According to data provided by the office of the Chief Operating Officer for the City of Providence, the amount of the ARC that was not paid in this fiscal year was $15,680,994. For the purposes of this analysis, we assume approximately 70% of non-funded ARC to be an additional hypothetical contribution made at the end of September 2001 and balance to be a hypothetical contributed made at the end of December 2001 so as to be in proportion to the size and timing of the ARC payments that were received by State Street.
	8/31/2001	--	--	$0	$0	-1.07%	$70,197,930	
	9/30/2001	--	--	$11,029,552	$23,571,512	-6.35%	$76,771,838	
	10/31/2001	--	--	$0	$0	2.91%	$79,009,496	
	11/30/2001	--	--	$0	$0	3.20%	$81,538,905	
	12/31/2001	--	--	$4,651,442	$9,940,705	2.24%	$88,015,407	
	1/31/2002	--	--	$0	$0	-1.03%	$87,109,732	
	2/28/2002	--	--	$0	$0	-0.77%	$86,434,720	
	3/31/2002	--	--	$0	$0	3.04%	$89,061,684	
	4/30/2002	--	--	$0	$0	-0.53%	$88,588,922	
	5/31/2002	--	--	$0	$0	-0.41%	$88,224,597	
	6/30/2002	--	--	$0	$0	-4.29%	$84,436,050	
Total FY 2002		**$26,761,006**	**$42,442,000**	**$15,680,994**	**$33,512,217**			

Analysis of Non-Funded ARC Payments
City of Providence ERS
Fiscal years 1997-2016

Assumptions
1.) Non-funded ARC payments are assumed to have been made on the last day of the same month when actual partial ARC payments were made.
2.) 100% of the non-funded ARC payments were contributed directly to the retirement portfolio and allocated in accordance with the prevailing target allocations.
3.) Rebalancing recommendations and the timing of them are assumed to be unchanged with additional ARC payments.
4.) Overfundings of ARC were ignored and, therefore, do not affect this analysis.
5.) The non-funded ARC payment of $9,669,353 for the fiscal year 1995 was ignored for this analysis because it predated Wainwright Investment Counsel, LLC's engagement and, therefore, no return data for the portfolio is available for that time period.

Notes
1.) Portfolio returns were obtained from State Street Corporation ("State Street").
2.) Data regarding required ARC payments, ARC payments made and ARC payments not made were obtained directly from the Office of the Chief Operating Officer for the City of Providence.

		As Provided by the Office of the Chief Operating Officer for the City of Providence			As Provided and Calculated by State Street Corporation ("State Street")			
FY	**Month**	Total ARC Payment Made	Required ARC Payment	$ Amount of ARC Not Paid = Additional Hypothetical Contribution	Actual ARC Contributions Received by State Street for the Portfolio	Total Net Portfolio Return as Calculated by State Street	**Cumulative Growth of Hypothetical Contribution**	**Comments**
2003	7/31/2002	--	--	$0	$0	-6.72%	$78,763,276	
	8/31/2002	--	--	$0	$0	1.36%	$79,838,233	
	9/30/2002	--	--	$0	$0	-5.98%	$75,064,456	According to data provided by the office of the Chief Operating Officer for the City of Providence, the amount of the ARC that was not paid in this fiscal year was $8,242,490. For purposes of this analysis, we assume this amount that was not contributed to be an additional hypothetical contribution in October 2002 when a partial ARC payment was received by State Street.
	10/31/2002	--	--	$8,242,490	$10,000,000	2.62%	$85,273,899	
	11/30/2002	--	--	$0	$0	3.53%	$88,280,398	
	12/31/2002	--	--	$0	$0	-3.50%	$85,188,320	
	1/31/2003	--	--	$0	$0	-0.92%	$84,400,747	
	2/28/2003	--	--	$0	$0	-1.67%	$82,991,772	
	3/31/2003	--	--	$0	$0	0.14%	$83,107,148	
	4/30/2003	--	--	$0	$0	6.10%	$88,176,389	
	5/31/2003	--	--	$0	$0	5.73%	$93,227,859	
	6/30/2003	--	--	$0	$0	1.48%	$94,603,708	
Total FY 2003		**$33,765,510**	**$42,008,000**	**$8,242,490**	**$10,000,000**			
2004	7/31/2003	--	--	$0	$0	2.72%	$97,178,719	
	8/31/2003	--	--	$0	$0	2.70%	$99,803,322	
	9/30/2003	--	--	$0	$0	0.14%	$99,941,615	According to data provided by the office of the Chief Operating Officer for the City of Providence, the amount of the ARC that was not paid in this fiscal year was $6,555,525. For purposes of this analysis, we assume this amount that was not contributed to be an additional hypothetical contribution in October 2003 when a partial ARC payment was received by State Street.
	10/31/2003	--	--	$6,555,525	$26,000,000	4.48%	$110,975,906	
	11/30/2003	--	--	$0	$0	2.12%	$113,330,068	
	12/31/2003	--	--	$0	$0	3.35%	$117,130,162	
	1/31/2004	--	--	$0	$0	2.46%	$120,010,819	
	2/29/2004	--	--	$0	$0	1.72%	$122,069,400	
	3/31/2004	--	--	$0	$0	0.49%	$122,663,692	
	4/30/2004	--	--	$0	$0	-2.64%	$119,419,666	
	5/31/2004	--	--	$0	$0	0.65%	$120,191,454	
	6/30/2004	--	--	$0	$0	2.63%	$123,355,325	
Total FY 2004		**$39,765,475**	**$46,321,000**	**$6,555,525**	**$26,000,000**			

Analysis of Non-Funded ARC Payments

City of Providence ERS

Fiscal years 1997-2016

Assumptions

1.) Non-funded ARC payments are assumed to have been made on the last day of the same month when actual partial ARC payments were made.
2.) 100% of the non-funded ARC payments were contributed directly to the retirement portfolio and allocated in accordance with the prevailing target allocations.
3.) Rebalancing recommendations and the timing of them are assumed to be unchanged with additional ARC payments.
4.) Overfundings of ARC were ignored and, therefore, do not affect this analysis.
5.) The non-funded ARC payment of $9,669,353 for the fiscal year 1995 was ignored for this analysis because it predated Wainwright Investment Counsel, LLC's engagement and, therefore, no return data for the portfolio is available for that time period.

Notes

1.) Portfolio returns were obtained from State Street Corporation ("State Street").
2.) Data regarding required ARC payments, ARC payments made and ARC payments not made were obtained directly from the Office of the Chief Operating Officer for the City of Providence.

		As Provided by the Office of the Chief Operating Officer for the City of Providence			As Provided and Calculated by State Street Corporation ("State Street")			
FY	Month	Total ARC Payment Made	Required ARC Payment	$ Amount of ARC Not Paid = Additional Hypothetical Contribution	Actual ARC Contributions Received by State Street for the Portfolio	Total Net Portfolio Return as Calculated by State Street	Cumulative Growth of Hypothetical Contribution	Comments
2005	7/31/2004	--	--	$0	$0	-3.69%	$118,801,506	
	8/31/2004	--	--	$0	$0	-0.47%	$118,242,784	
	9/30/2004	--	--	$0	$0	2.52%	$121,227,095	According to data provided by the office of the
	10/31/2004	--	--	$3,874,000	$38,000,000	1.64%	$127,083,944	Chief Operating Officer for the City of Providence,
	11/30/2004	--	--	$0	$0	4.85%	$133,250,691	the amount of the ARC that was not paid in this
	12/31/2004	--	--	$0	$0	3.09%	$137,368,083	fiscal year was $3,874,000. For purposes of this
	1/31/2005	--	--	$0	$0	-1.39%	$135,456,547	analysis, we assume this amount that was not
	2/28/2005	--	--	$0	$0	2.04%	$138,225,844	contributed to be an additional hypothetical
	3/31/2005	--	--	$0	$0	-1.65%	$135,940,224	contribution in October 2004 when a partial ARC
	4/30/2005	--	--	$0	$0	-2.87%	$132,039,414	payment was received by State Street.
	5/31/2005	--	--	$0	$0	2.87%	$135,830,164	
	6/30/2005	--	--	$0	$0	1.46%	$137,810,473	
Total FY 2005		**$45,455,000**	**$49,329,000**	**$3,874,000**	**$38,000,000**			
2006	7/31/2005	--	--	$0	$0	3.40%	$142,499,506	
	8/31/2005	--	--	$0	$0	-0.21%	$142,207,085	
	9/30/2005	--	--	$0	$0	1.52%	$144,372,756	According to data provided by the office of the
	10/31/2005	--	--	$1,944,000	$38,000,000	-1.87%	$143,618,520	Chief Operating Officer for the City of Providence,
	11/30/2005	--	--	$0	$0	2.62%	$147,381,018	the amount of the ARC that was not paid in this
	12/31/2005	--	--	$0	$0	0.96%	$148,790,697	fiscal year was $1,944,000. For purposes of this
	1/31/2006	--	--	$0	$0	3.69%	$154,282,225	analysis, we assume this amount that was not
	2/28/2006	--	--	$0	$0	0.41%	$154,911,434	contributed to be an additional hypothetical
	3/31/2006	--	--	$0	$0	2.49%	$158,765,135	contribution in October 2005 when a partial ARC
	4/30/2006	--	--	$0	$0	1.44%	$161,051,693	payment was received by State Street.
	5/31/2006	--	--	$0	$0	-2.79%	$156,553,607	
	6/30/2006	--	--	$0	$0	-0.08%	$156,432,839	
Total FY 2006		**$49,510,000**	**$51,454,000**	**$1,944,000**	**$38,000,000**			

Analysis of Non-Funded ARC Payments
City of Providence ERS
Fiscal years 1997-2016

Assumptions
1.) Non-funded ARC payments are assumed to have been made on the last day of the same month when actual partial ARC payments were made.
2.) 100% of the non-funded ARC payments were contributed directly to the retirement portfolio and allocated in accordance with the prevailing target allocations.
3.) Rebalancing recommendations and the timing of them are assumed to be unchanged with additional ARC payments.
4.) Overfundings of ARC were ignored and, therefore, do not affect this analysis.
5.) The non-funded ARC payment of $9,669,353 for the fiscal year 1995 was ignored for this analysis because it predated Wainwright Investment Counsel, LLC's engagement and, therefore, no return data for the portfolio is available for that time period.

Notes
1.) Portfolio returns were obtained from State Street Corporation ("State Street").
2.) Data regarding required ARC payments, ARC payments made and ARC payments not made were obtained directly from the Office of the Chief Operating Officer for the City of Providence.

		As Provided by the Office of the Chief Operating Officer for the City of Providence			As Provided and Calculated by State Street Corporation ("State Street")			
FY	Month	Total ARC Payment Made	Required ARC Payment	$ Amount of ARC Not Paid = Additional Hypothetical Contribution	Actual ARC Contributions Received by State Street for the Portfolio	Total Net Portfolio Return as Calculated by State Street	**Cumulative Growth of Hypothetical Contribution**	**Comments**
2007	7/31/2006	--	--	$0	$0	-0.29%	$155,978,782	
	8/31/2006	--	--	$0	$0	1.88%	$158,905,507	
	9/30/2006	--	--	$0	$0	2.02%	$162,115,445	
	10/31/2006	--	--	$0	$42,200,000	2.69%	$166,476,774	
	11/30/2006	--	--	$0	$0	2.28%	$170,276,876	According to data provided by the office of the Chief Operating Officer for the City of Providence, the required ARC was fully paid during this fiscal year.
	12/31/2006	--	--	$0	$0	1.33%	$172,539,316	
	1/31/2007	--	--	$0	$0	1.08%	$174,409,304	
	2/28/2007	--	--	$0	$0	0.65%	$175,541,733	
	3/31/2007	--	--	$0	$0	1.50%	$178,173,421	
	4/30/2007	--	--	$0	$0	3.21%	$183,893,289	
	5/31/2007	--	--	$0	$0	2.33%	$188,177,333	
	6/30/2007	--	--	$0	$0	-1.19%	$185,947,308	
Total FY 2007		**$50,584,000**	**$50,584,000**	**$0**	**$42,200,000**			
2008	7/31/2007	--	--	$0	$0	-3.63%	$179,190,609	
	8/31/2007	--	--	$0	$0	0.26%	$179,652,826	
	9/30/2007	--	--	$0	$0	1.99%	$183,225,177	
	10/31/2007	--	--	$0	$45,000,000	1.26%	$185,527,765	According to data provided by the office of the Chief Operating Officer for the City of Providence, the ARC payment was overfunded this fiscal year by $79,966. This amount was ignored for purposes of this analysis.
	11/30/2007	--	--	$0	$0	-2.04%	$181,742,779	
	12/31/2007	--	--	$0	$0	-0.71%	$180,455,197	
	1/31/2008	--	--	$0	$0	-3.37%	$174,377,188	
	2/29/2008	--	--	$0	$0	-1.70%	$171,409,942	
	3/31/2008	--	--	$0	$0	-1.29%	$169,191,404	
	4/30/2008	--	--	$0	$0	2.83%	$173,985,041	
	5/31/2008	--	--	$0	$0	1.66%	$176,867,208	
	6/30/2008	--	--	$0	$0	-5.88%	$166,474,199	
Total FY 2008		**$54,199,966**	**$54,120,000**	**$0**	**$45,000,000**			

Analysis of Non-Funded ARC Payments
City of Providence ERS
Fiscal years 1997-2016

Assumptions
1.) Non-funded ARC payments are assumed to have been made on the last day of the same month when actual partial ARC payments were made.
2.) 100% of the non-funded ARC payments were contributed directly to the retirement portfolio and allocated in accordance with the prevailing target allocations.
3.) Rebalancing recommendations and the timing of them are assumed to be unchanged with additional ARC payments.
4.) Overfundings of ARC were ignored and, therefore, do not affect this analysis.
5.) The non-funded ARC payment of $9,669,353 for the fiscal year 1995 was ignored for this analysis because it predated Wainwright Investment Counsel, LLC's engagement and, therefore, no return data for the portfolio is available for that time period.

Notes
1.) Portfolio returns were obtained from State Street Corporation ("State Street").
2.) Data regarding required ARC payments, ARC payments made and ARC payments not made were obtained directly from the Office of the Chief Operating Officer for the City of Providence.

		As Provided by the Office of the Chief Operating Officer for the City of Providence			As Provided and Calculated by State Street Corporation ("State Street")			
FY	Month	Total ARC Payment Made	Required ARC Payment	$ Amount of ARC Not Paid = Additional Hypothetical Contribution	Actual ARC Contributions Received by State Street for the Portfolio	Total Net Portfolio Return as Calculated by State Street	Cumulative Growth of Hypothetical Contribution	Comments
2009	7/31/2008	--	--	$0	$0	0.24%	$166,869,883	According to data provided by the office of the Chief Operating Officer for the City of Providence, the amount of the ARC that was not paid in this fiscal year was $136. For purposes of this analysis, we assume 76% of non-funded ARC to be an additional hypothetical contribution made at the end of October 2008 and 24% to be an additional hypothetical contributed made at the end of December 2008 so as to be in proportion to the size and timing of the ARC payments that were received by State Street.
	8/31/2008	--	--	$0	$0	0.78%	$168,164,400	
	9/30/2008	--	--	$0	$0	-7.57%	$155,435,197	
	10/31/2008	--	--	$104	$48,899,966	-13.73%	$134,101,422	
	11/30/2008	--	--	$0	$0	-3.98%	$128,769,476	
	12/31/2008	--	--	$32	$15,000,000	4.39%	$134,419,529	
	1/31/2009	--	--	$0	$0	-4.83%	$127,933,190	
	2/28/2009	--	--	$0	$0	-5.83%	$120,477,313	
	3/31/2009	--	--	$0	$0	4.26%	$125,611,139	
	4/30/2009	--	--	$0	$0	7.18%	$134,635,700	
	5/31/2009	--	--	$0	$0	3.32%	$139,107,112	
	6/30/2009	--	--	$0	$0	1.22%	$140,809,943	
Total FY 2009		**$48,409,864**	**$48,410,000**	**$136**	**$63,899,966**			
2010	7/31/2009	--	--	$0	$0	6.15%	$149,464,297	According to data provided by the office of the Chief Operating Officer for the City of Providence, the amount of the ARC that was not paid in this fiscal year was $2,176,125. For purposes of this analysis we assume approximately 66% of non-funded ARC to be an additional hypothetical contribution made at the end of October 2009; approximately 20% to be an additional hypothetical contributed made at the end of December 2009 and the balance to be an additional hypothetical contribution made at the end of February 2010 so as to be in proportion to the size and timing of the ARC payments that were received by State Street.
	8/31/2009	--	--	$0	$0	3.57%	$154,795,025	
	9/30/2009	--	--	$0	$0	3.50%	$160,208,765	
	10/31/2009	--	--	$1,440,682	$33,409,864	-1.64%	$159,018,366	
	11/30/2009	--	--	$0	$0	2.74%	$163,370,988	
	12/31/2009	--	--	$431,215	$10,000,000	1.84%	$166,808,319	
	1/31/2010	--	--	$0	$0	-1.78%	$163,847,334	
	2/28/2010	--	--	$304,228	$7,055,149	1.69%	$166,926,047	
	3/31/2010	--	--	$0	$0	4.35%	$174,188,776	
	4/30/2010	--	--	$0	$0	1.43%	$176,685,308	
	5/31/2010	--	--	$0	$0	-5.53%	$166,922,830	
	6/30/2010	--	--	$0	$0	-2.88%	$162,121,943	
Total FY 2010		**$49,122,875**	**$51,299,000**	**$2,176,125**	**$50,465,013**			

Analysis of Non-Funded ARC Payments
City of Providence ERS
Fiscal years 1997-2016

Assumptions
1.) Non-funded ARC payments are assumed to have been made on the last day of the same month when actual partial ARC payments were made.
2.) 100% of the non-funded ARC payments were contributed directly to the retirement portfolio and allocated in accordance with the prevailing target allocations.
3.) Rebalancing recommendations and the timing of them are assumed to be unchanged with additional ARC payments.
4.) Overfundings of ARC were ignored and, therefore, do not affect this analysis.
5.) The non-funded ARC payment of $9,669,353 for the fiscal year 1995 was ignored for this analysis because it predated Wainwright Investment Counsel, LLC's return data for the portfolio is available for that time period.

Notes
1.) Portfolio returns were obtained from State Street Corporation ("State Street").
2.) Data regarding required ARC payments, ARC payments made and ARC payments not made were obtained directly from the Office of the Chief Operating Of

		As Provided by the Office of the Chief Operating Officer for the City of Providence			As Provided and Calculated by State Street Corporation ("State Street")			
FY	Month	Total ARC Payment Made	Required ARC Payment	$ Amount of ARC Not Paid = Additional Hypothetical Contribution	Actual ARC Contributions Received by State Street for the Portfolio	Total Net Portfolio Return as Calculated by State Street	Cumulative Growth of Hypothetical Contribution	Comments
2011	7/31/2010	--	--	$0	$0	5.34%	$170,772,810	
	8/31/2010	--	--	$0	$0	-3.12%	$165,447,663	
	9/30/2010	--	--	$0	$0	7.62%	$178,060,724	
	10/31/2010	--	--	$0	$17,380,333	3.30%	$183,940,542	According to
	11/30/2010	--	--	$0	$18,954,238	-0.71%	$182,635,468	Chief Operat
	12/31/2010	--	--	$0	$0	4.61%	$191,062,842	the ARC pay
	1/31/2011	--	--	$0	$0	1.86%	$194,622,818	by $113,791
	2/28/2011	--	--	$0	$0	3.49%	$201,415,639	purposes of t
	3/31/2011	--	--	$0	$0	0.52%	$202,464,584	
	4/30/2011	--	--	$0	$0	3.32%	$209,188,568	
	5/31/2011	--	--	$0	$0	-0.78%	$207,558,489	
	6/30/2011	--	--	$0	$0	-1.26%	$204,948,368	
Total FY 2011		**$56,493,791**	**$56,380,000**	**$0**	**$36,334,571**			
2012	7/31/2011	--	--	$0	$0	-1.65%	$201,574,547	
	8/31/2011	--	--	$0	$0	-3.87%	$193,771,645	
	9/30/2011	--	--	$0	$0	-5.19%	$183,706,535	According to
	10/31/2011	--	--	$10,474,866	$54,869,596	7.41%	$207,802,901	Chief Operat
	11/30/2011	--	--	$0	$0	-0.85%	$206,038,943	the amount c
	12/31/2011	--	--	$0	$0	0.11%	$206,257,889	fiscal year wa
	1/31/2012	--	--	$0	$0	3.48%	$213,441,108	analysis, we
	2/29/2012	--	--	$0	$0	2.95%	$219,727,833	contributed t
	~~3/31/2012~~	--	--	$0	$0	1.71%	~~$223,490,621~~	contribution i
	4/30/2012	--	--	$0	$0	-0.74%	$221,840,641	payment was
	5/31/2012	--	--	$0	$0	-5.02%	$210,714,131	
	6/30/2012	--	--	$0	$0	2.62%	$216,241,516	
Total FY 2012		**$48,454,134**	**$58,929,000**	**$10,474,866**	**$54,869,596**			

Analysis of Non-Funded ARC Payments
City of Providence ERS
Fiscal years 1997-2016

Assumptions
1.) Non-funded ARC payments are assumed to have been made on the last day of the same month when actual partial ARC payments were made.
2.) 100% of the non-funded ARC payments were contributed directly to the retirement portfolio and allocated in accordance with the prevailing target allocations.
3.) Rebalancing recommendations and the timing of them are assumed to be unchanged with additional ARC payments.
4.) Overfundings of ARC were ignored and, therefore, do not affect this analysis.
5.) The non-funded ARC payment of $9,669,353 for the fiscal year 1995 was ignored for this analysis because it predated Wainwright Investment Counsel, LLC's engagement and, therefore, no return data for the portfolio is available for that time period.

Notes
1.) Portfolio returns were obtained from State Street Corporation ("State Street").
2.) Data regarding required ARC payments, ARC payments made and ARC payments not made were obtained directly from the Office of the Chief Operating Officer for the City of Providence.

		As Provided by the Office of the Chief Operating Officer for the City of Providence			As Provided and Calculated by State Street Corporation ("State Street")			
FY	**Month**	Total ARC Payment Made	Required ARC Payment	$ Amount of ARC Not Paid = Additional Hypothetical Contribution	Actual ARC Contributions Received by State Street for the Portfolio	Total Net Portfolio Return as Calculated by State Street	**Cumulative Growth of Hypothetical Contribution**	**Comments**
2013	7/31/2012	--	--	$0	$0	0.57%	$217,466,285	
	8/31/2012	--	--	$0	$0	2.07%	$221,972,440	
	9/30/2012	--	--	$0	$0	2.02%	$226,457,114	According to data provided by the office of the Chief Operating Officer for the City of Providence, the amount of the ARC that was not paid in this fiscal year was $487. For purposes of this analysis, we assume this amount that was not contributed to be an additional hypothetical contribution in October 2012 when a partial ARC payment was received by State Street.
	10/31/2012	--	--	$487	$48,454,134	-0.68%	$224,925,897	
	11/30/2012	--	--	$0	$0	0.82%	$226,763,452	
	12/31/2012	--	--	$0	$0	1.17%	$229,424,963	
	1/31/2013	--	--	$0	$0	3.74%	$238,001,582	
	2/28/2013	--	--	$0	$0	0.31%	$238,735,900	
	3/31/2013	--	--	$0	$0	2.24%	$244,095,284	
	4/30/2013	--	--	$0	$0	1.50%	$247,766,331	
	5/31/2013	--	--	$0	$0	0.46%	$248,903,692	
	6/30/2013	--	--	$0	$0	-1.48%	$245,232,151	
Total FY 2013		**$58,144,513**	**$58,145,000**	**$487**	**$48,454,134**			
2014	7/31/2013	--	--	$0	$0	3.79%	$254,521,008	
	8/31/2013	--	--	$0	$0	-1.98%	$249,478,387	
	9/30/2013	--	--	$0	$0	4.02%	$259,504,714	
	10/31/2013	--	--	$0	$58,144,513	3.13%	$267,621,264	
	11/30/2013	--	--	$0	$0	1.34%	$271,205,836	According to data provided by the office of the Chief Operating Officer for the City of Providence, the required ARC was fully paid during this fiscal year.
	12/31/2013	--	--	$0	$0	1.17%	$274,379,153	
	1/31/2014	--	--	$0	$0	-1.94%	$269,047,802	
	2/28/2014	--	--	$0	$0	3.46%	$278,350,751	
	3/31/2014	--	--	$0	$0	0.89%	$280,818,550	
	4/30/2014	--	--	$0	$0	0.05%	$280,959,367	
	5/31/2014	--	--	$0	$0	1.34%	$284,720,921	
	6/30/2014	--	--	$0	$0	1.17%	$288,044,696	
Total FY 2014		**$62,000,000**	**$62,000,000**	**$0**	**$58,144,513**			

Analysis of Non-Funded ARC Payments
City of Providence ERS
Fiscal years 1997-2016

Assumptions

1.) Non-funded ARC payments are assumed to have been made on the last day of the same month when actual partial ARC payments were
2.) 100% of the non-funded ARC payments were contributed directly to the retirement portfolio and allocated in accordance with the prevaili
3.) Rebalancing recommendations and the timing of them are assumed to be unchanged with additional ARC payments.
4.) Overfundings of ARC were ignored and, therefore, do not affect this analysis.
5.) The non-funded ARC payment of $9,669,353 for the fiscal year 1995 was ignored for this analysis because it predated Wainwright Invest return data for the portfolio is available for that time period.

Notes

1.) Portfolio returns were obtained from State Street Corporation ("State Street").
2.) Data regarding required ARC payments, ARC payments made and ARC payments not made were obtained directly from the Office of the

FY	Month	Total ARC Payment Made	Required ARC Payment	$ Amount of ARC Not Paid = Additional Hypothetical Contribution	Actual ARC Contributions Received by State Street for the Portfolio	Total Net Portfolio Return as Calculated by State Street	Cumulati Growth Hypotheti Contributi
		As Provided by the Office of the Chief Operating Officer for the City of Providence			**As Provided and Calculated by State Street Corporation ("State Street")**		
2015	7/31/2014	--	--	~~$0~~	$0	-1.83%	$282,784,
	8/31/2014	--	--	$0	$33,826,940	2.20%	$289,015,
	9/30/2014	--	--	$0	$0	-2.27%	$282,454,
	10/31/2014	--	--	$0	$28,173,060	1.89%	$287,782,
	11/30/2014	--	--	$0	$0	1.54%	$292,214,
	12/31/2014	--	--	$0	$0	-0.26%	$291,441,
	1/31/2015	--	--	$0	$0	-0.48%	$290,050,
	2/28/2015	--	--	$0	$0	3.49%	$300,180,
	3/31/2015	--	--	$0	$0	-0.21%	$299,538,
	4/30/2015	--	--	$0	$0	0.41%	$300,774,
	5/31/2015	--	--	$0	$0	0.08%	$301,024,
	6/30/2015	--	--	$0	$12,416,701	-1.12%	$297,659,
Total FY 2015		**$66,847,315**	**$66,543,967**	**$0**	**$74,416,701**		
2016	7/31/2015	--	--	$0	$42,000,000	1.20%	$301,229,
	8/31/2015	--	--	$0	$12,459,219	-2.82%	$292,739,
	9/30/2015	--	--	$0	$937,425	-1.27%	$289,009,
	10/31/2015	--	--	$0	$0	4.11%	$300,889,
	11/30/2015	--	--	$0	$937,425	-0.07%	$300,677,
	12/31/2015	--	--	$0	$0	-1.70%	$295,565,
	1/31/2016	--	--	$0	$0	-2.87%	$287,079,
	2/29/2016	--	--	$0	$0	0.53%	$288,604,
	3/31/2016	--	--	$0	$2,982,350	4.69%	$302,139,
	4/30/2016	--	--	$0	$3,542,385	0.56%	$303,826,
	5/31/2016	--	--	$0	$1,235,127	0.28%	$304,666,
	6/30/2016	--	--	$0	$13,637,905	0.24%	$305,384,
Total FY 2016		**$70,704,335**	**$70,704,335**	**$0**	**$77,731,836**		

Analysis of Non-Funded ARC Payments
City of Providence ERS
Fiscal years 1997-2016

Assumptions

1.) Non-funded ARC payments are assumed to have been made on the last day of the same month when actual partial ARC payments were
2.) 100% of the non-funded ARC payments were contributed directly to the retirement portfolio and allocated in accordance with the prevaili
3.) Rebalancing recommendations and the timing of them are assumed to be unchanged with additional ARC payments.
4.) Overfundings of ARC were ignored and, therefore, do not affect this analysis.
5.) The non-funded ARC payment of $9,669,353 for the fiscal year 1995 was ignored for this analysis because it predated Wainwright Invest return data for the portfolio is available for that time period.

Notes

1.) Portfolio returns were obtained from State Street Corporation ("State Street").
2.) Data regarding required ARC payments, ARC payments made and ARC payments not made were obtained directly from the Office of the

		As Provided by the Office of the Chief Operating Officer for the City of Providence			As Provided and Calculated by State Street Corporation ("State Street")	
FY	**Month**	Total ARC Payment Made	Required ARC Payment	$ Amount of ARC Not Paid = Additional Hypothetical Contribution	Actual ARC Contributions Received by State Street for the Portfolio	**Cumulati Growth Hypotheti Contributi**
Grand Totals (FY 1997-2016)		$868,233,340	$979,218,302	$111,482,067	$759,028,547	$305,384,

RESULTS OF ANALYSIS: According to the data provided by the Office of the Chief Operating Officer for the City of Providence an ARC payments made by the City total $868,233,340, the required ARC payments total $979,218,302, and the dollar amount of the figure excludes total ARC overfundings during the period of $497,105. Under the assumptions listed at the top of this analysis, had portfolio at the same time and in the same proportion as the partial payments that were received by State Street, there would be

DISCLAIMER

The information contained herein is provided for informational and discussion purposes only.

This information is not, and may not be relied on, in any manner, as legal, tax, accounting or regulatory advice nor does
an offer to buy any securities and may not be used or relied upon in connection with any offer or sale of securities.

Any financial transaction involves a variety of potential significant risks and issues. Before entering into any financial
understand the terms, have evaluated the risks and have determined that the transaction is appropriate for you in all respe
investment objectives will be achieved. **Past performance is never a guarantee of future investment results. Actual r**

Additional information is available upon request.

EXHIBIT 10

Funding Schedule 19 – Contribute additional $250 million in assets on June 30, 2017

(1) Fiscal Year Ended June 30	(2) Employer Normal Cost	(3) Amortization of Deferral Liability	(4) Amortization of Remaining Unfunded Liability	(5) Total Plan Cost: (2) + (3) + (4)	(6) Increase	(7) Payroll	(8) Contributions as a % of Payroll: (5) / (7)	As of Beginning of Fiscal Year (9) Actuarial Accrued Liability	(10) Actuarial Value of Assets	(11) Total Unfunded Accrued Liability
2015	$7,125,364	$471,667	$58,946,936	$66,543,967	- -	$142,503,824	46.70%	$1,232,988,353	$338,253,329	$894,735,024
2016	7,374,752	471,667	63,012,448	70,858,867	6.48%	147,491,458	48.04%	1,248,076,531	349,018,453	899,058,078
2017	7,632,868	471,667	65,146,622	73,251,156	3.38%	152,653,659	47.99%	1,271,117,851	362,827,394	908,290,457
2018	7,900,018	471,667	48,539,124	56,910,809	-22.31%	157,996,537	36.02%	1,295,040,674	633,401,392	661,639,282
2019	8,176,519	471,667	49,970,143	58,618,329	3.00%	163,526,416	35.85%	1,319,977,072	656,301,070	663,676,002
2020	8,462,697	471,667	51,719,098	60,653,462	3.47%	169,249,840	35.84%	1,345,709,905	677,722,443	667,987,462
2021	8,758,891	471,667	53,529,267	62,759,825	3.47%	175,173,585	35.83%	1,372,836,356	701,930,694	670,905,662
2022	9,065,452	471,667	55,402,791	64,939,910	3.47%	181,304,660	35.82%	1,401,441,610	729,187,165	672,254,445
2023	9,382,743	471,667	57,341,889	67,196,299	3.47%	187,650,323	35.81%	1,431,882,462	760,041,484	671,840,978
2024	9,711,139	471,667	59,348,855	69,531,661	3.48%	194,218,085	35.80%	1,463,298,576	793,844,273	669,454,303
2025	10,051,029	471,667	61,426,065	71,948,761	3.48%	201,015,718	35.79%	1,495,082,666	830,218,905	664,863,761
2026	10,402,815	471,667	63,575,977	74,450,459	3.48%	208,051,268	35.78%	1,527,437,781	869,620,492	657,817,289
2027	10,766,914	471,667	65,801,136	77,039,717	3.48%	215,333,062	35.78%	1,560,620,039	912,580,467	648,039,572
2028	11,143,756	471,667	68,104,176	79,719,599	3.48%	222,869,719	35.77%	1,595,012,020	959,781,987	635,230,033
2029	11,533,787	471,667	70,487,822	82,493,276	3.48%	230,670,159	35.76%	1,630,753,794	1,011,693,127	619,060,667
2030	11,937,470	471,667	72,954,896	85,364,033	3.48%	238,743,615	35.76%	1,668,281,368	1,069,107,685	599,173,683
2031	12,355,281	471,667	75,508,317	88,335,265	3.48%	247,099,641	35.75%	1,707,776,590	1,132,597,641	575,178,949
2032	12,787,716	- -	78,151,109	90,938,825	2.95%	255,748,129	35.56%	1,749,724,311	1,203,073,082	546,651,229
2033	13,235,286	- -	80,886,397	94,121,683	3.50%	264,699,313	35.56%	1,794,860,957	1,281,262,110	513,598,847
2034	13,698,521	- -	83,717,421	97,415,942	3.50%	273,963,789	35.56%	1,843,639,782	1,368,555,427	475,084,355
2035	14,177,969	- -	86,647,531	100,825,500	3.50%	283,552,522	35.56%	1,896,829,589	1,466,268,196	430,561,393
2036	14,674,198	- -	89,680,195	104,354,393	3.50%	293,476,860	35.56%	1,955,017,668	1,575,582,491	379,435,177
2037	15,187,795	- -	92,819,001	108,006,796	3.50%	303,748,550	35.56%	2,019,044,421	1,697,986,036	321,058,385
2038	15,719,368	- -	96,067,666	111,787,034	3.50%	314,379,750	35.56%	2,089,578,110	1,834,851,410	254,726,700
2039	16,269,546	- -	99,430,035	115,699,581	3.50%	325,383,041	35.56%	2,167,698,921	1,988,024,935	179,673,986
2040	16,838,980	- -	102,910,086	119,749,066	3.50%	336,771,447	35.56%	2,253,988,545	2,158,921,490	95,067,055
2041	17,428,344	- -	- -	17,428,344	-85.45%	348,558,448	5.00%	2,349,515,004	2,349,515,004	- -

Notes: *Recommended contributions are assumed to be paid on June 30. If the contribution is made after June 30, Segal will calculate the additional interest charge based on the date of payment.*
Normal cost is projected on a closed group basis by assuming a 3.5% increase per year.
Amortization payments of remaining unfunded liability increase at 3.5% per year.
Assumes contribution of budgeted amount for fiscal year 2015.
Schedule reflects deferred investment gains.
Participants who opted out of the Consent of Judgments regarding the resumption of retiree COLAs are assumed to have their COLAs commence on January 1, 2033.

Segal Consulting