## New Orleans Fire


# PENSION PLAN PROJECTIONS

November 11, 2014

Segal Consulting

# Introduction and Purpose

- Segal Consulting was retained by the Business Council of the City of New Orleans (BCNO) and the City of New Orleans through a cooperative endeavor agreement (CEA) in mid-October 2014 to provide actuarial and technical analysis to the Pension Task Force.
- The scope of the actuarial and technical analysis Segal is expected to provide includes, but is not limited to:
  - Replicate plan liabilities based on current assumptions,
  - Project plan cost based on current assumptions (i.e., “baseline” projection),
  - Review actuarial assumptions and suggest modifications to use in future modeling,
  - Create a model to project future plan liabilities, cost and cash flow based on suggested assumptions and methods,
  - Analyze sensitivity of results based on assumption changes and investment returns, and
  - Model cash flows under various scenarios.
- **Note that Segal is tasked with replicating the current plan of benefits based on the current assumptions and then projecting the cost using a “reasonable” set of actuarial assumptions and methods based on its professional experience.**
- **Therefore, the projected cost provided by Segal may differ from the current actuary’s projections.**
  - The actual cost patterns may differ even if the assumptions are the same since the method to determine the cost may differ slightly.
  - However, the present value of the projected benefits should be about the same since the plan of benefits modeled is the same.

# Replicating the Current Plan of Benefits

- The project scope includes Segal producing a full replication of the results based on the January 1, 2014 valuation issued June 2014.
  - **Note that the valuation report is expected to re-issued to reflect method changes as outlined in the recent settlement agreement.**
  - The revised valuation report is expected to be released soon and will include a change to the Entry Age Normal funding method, 30-year level dollar open amortization and 7-year asset smoothing.
- Segal collected participant data from the plan's actuary and matched the most recent actuarial results to within 0.2% using the assumptions and methods outlined in the January 1, 2014 report. Therefore, Segal and the Plan's actuary are modeling the same plan of benefits.

| | 2014 Valuation Report* | Segal | Difference | % Difference |
|---|---|---|---|---|
| **Actives** | | | | |
| (1) Retirement benefits* | 126,520,040 | 126,632,619 | 112,579 | 0.1% |
| (2) Survivor benefits | 6,252,533 | 5,729,825 | (522,708) | -8.4% |
| (3) Disability benefits | 41,938,405 | 43,341,649 | 1,403,244 | 3.3% |
| (4) Vesting benefits | 2,139,146 | 2,028,370 | (110,776) | -5.2% |
| (5) Refunds of Employee contributions | 251,871 | 251,871 | 0 | 0.0% |
| **Actives sub-total** | **177,101,995** | **177,984,334** | **882,339** | **0.5%** |
| **Inactives** | | | | |
| (1) Ordinary retirement | 126,606,811 | 126,550,214 | (56,597) | 0.0% |
| (2) Disabled retirement | 51,646,447 | 51,646,387 | (60) | 0.0% |
| (3) Survivors and widows | 19,807,963 | 19,815,520 | 7,557 | 0.0% |
| (4) Terminated vested | 248,063 | 248,063 | 0 | 0.0% |
| (5) PLOP Account balances | 31,148,352 | 31,148,352 | 0 | 0.0% |
| (6) DROP account balances | 34,417,969 | 34,417,969 | 0 | 0.0% |
| (7) DROP Future benefits* | 37,475,414 | 37,456,309 | (19,105) | -0.1% |
| **Inactives sub-total** | **301,351,019** | **301,282,814** | **(68,205)** | **0.0%** |
| **Actives + Inactives** | **478,453,014** | **479,267,148** | **814,134** | **0.2%** |

* As revised per actuary October 31, 2014

# Overview of Actuarial Assumptions

Two categories:

1. **Demographic Assumptions:** When will benefits be payable? Who will be there to receive benefits? What amount will be payable?
2. **Economic Assumptions:** How much will assets grow? How will salaries increase? What is the expectation for long-term inflation?

| Economic | Demographic |
|---|---|
| • Discount rate (Investment rate of return)<br>• Salary increases<br>• Inflation<br>• Payroll growth rate<br>• Administrative expenses<br>• Cost-of-Living Adjustment (COLA) | • Retirement<br>• Withdrawal<br>• Disability<br>• Death in active service<br>• Death after retirement<br>• Percent married<br>• Percentage electing refund of contributions<br>• Percentage electing lump sums |

# Plan Experience

- Periodically, plan experience should be reviewed to ensure the assumptions used in the valuation are reasonably expected to track future plan experience.
  - If actuarial assumptions and plan experience are not in line, the plan may incur unnecessary contribution and accounting volatility.
  - Additionally, the funding requirements of the Plan are based on the liability determined by the assumptions. If assumptions vary significantly from actual experience, the funding of the plan may be inadequate to deliver the promised benefits.
- To determine whether there are any important sources of actuarial experience gains or losses, plans conduct periodic investigations to test whether actual experience is being accurately projected by the actuarial assumptions. These experience reviews are useful tools for measuring the continued appropriateness of existing assumptions, and serve as early warning devices for identifying potential important trends that may be developing.
- Current industry standards recommend conducting an experience analysis every four to five years for due diligence and to meet fiduciary responsibilities.
- **It is our understanding, the Plan has not conducted an in-depth experience analysis since at least 2000.** Therefore, pursuant to current industry standards, an experience analysis should be conducted as soon as possible.
- Segal is in process of conducting a high-level review of the assumptions and will suggest modifications to the assumptions for modeling future plan cost. However, Segal's review is not a substitute for an in-depth experience study and will only be for purposes of modeling future cost.

# Economic Assumptions

| Assumption | Current | Commentary |
|---|---|---|
| **Salary scale** | 5.00% for all ages and years of service | • Current assumption underestimates pay increases for younger/more recently hired employees and overestimates pay increases for older/tenured employees, with a net tendency to overstate liabilities<br>• Potentially establishes higher than necessary funding/cost if salary increases below assumption |
| **Discount Rate** (Rate used to determine liability**)** | 7.50% | • Segal estimates reasonable range of about 7.00% to 7.75% based on capital market assumptions and ~60/40 equity/bond portfolio.<br>• The lower end of the range (7.00%) anticipates the plan will have about a 55% chance of meeting or exceeding the return.<br>• NASRA 2014 survey average = 7.72%<br>• The cash flow needs of the Plan may impact the ability to earn the assumed rate of return |

# Key Demographic Assumptions

| Assumption | Current | Commentary |
|---|---|---|
| **Mortality** | • Heathy: 1994 Uninsured Pensioner Table (UP94)<br>• Disabled: 1994 Uninsured Pensioner Table set forward 5 years<br>– UP-94 life expectancy from age 65 = 17.3 years (or age 82.3) | • Review current assumption to determine if within acceptable actuarial standards of practice, but potentially establishes lower than necessary funding/cost based on gap in life expectancy (i.e., longevity) between the assumed table and national averages.<br>• New Orleans-area improvements in life expectancy have lagged national increases[1] |
| **Retirement** | • Assumes 100% retire (or enter DROP) at earliest of age/service: 60/12 or 50/30 or 0/25) | • The current contribution requirements are based on every participant retiring at a single point (i.e., ~Normal Retirement date).<br>• Recently updated Actuarial Standards of Practice (ASOPs) do not recommended use of single rate |
| **Turnover** | • Rates based on age and service. Higher rates during first 5 years of employment<br>• Approximately 5.0% of new hires assumed to withdraw annually during first two years of employment | • Further review needed to determine how well assumption is tracking plan experience |
| **Disability** | • Rates vary based on age<br>• Approximately 2.5% of participants in their 40s are assumed to be disabled annually (3.8% in 50s)<br>• 80% are assumed to be service-related | • Further review needed to determine how well assumption is tracking plan experience<br>• Also, need to review mortality experience for disabled firefighters |

[1] Source: Institute for Health Metrics and Evaluation, 2013

I. Background

II. Projections

III. Impact of Pre-Funding

Appendices

# Disclosure

- This presentation is intended for the use of the Task Force, for the purpose of modeling projected plan liabilities of the City's Firefighters' Pension Relief Fund.
- Projections, by their nature, are not a guarantee of future results. They are intended to serve as estimates of future financial outcomes that are based on assumptions about future experience and the information available at the time the modeling is undertaken and completed. The charts included in this presentation show how the Plan would be affected if specific investment return, mortality, turnover, disability and retirement assumptions are met. Actual results may differ due to such variables as demographic experience, the economy, stock market performance and the regulatory environment.
- The calculations included in this presentation were completed under the supervision of Eric J. Atwater, FSA, FCA, MAAA, EA and Deborah K. Brigham, FCA, ASA, MAAA, EA, with the assistance of Matt Powell.
- **To project future cost, Segal has used the Entry Age Normal funding method, as outlined in the most recent settlement agreement**. This is a change in the method used to produce the January 1, 2014 valuation report.
- **Segal used the market value of assets with 7-year smoothing prospectively to project future cost due to the gap between the smoothed value (i.e., Actuarial Value of Assets) and un-smoothed (i.e., Market Value of Assets) exceeding 40%.**
- **Additionally, the Annual Recommended Contribution (ARC) is based on a 30-year closed amortization (i.e., fully funded in 30 years) instead of the 30-year open amortization per the settlement agreement.**
- The rest of the assumptions and methods from the most recent actuarial report were used to project the "baseline" cost.

# Projection Assumptions and Methods

| | |
|---|---|
| **Participant Data** | Census data as of January 1, 2014 |
| **Projection Methodology** | Liabilities are projected forward assuming all economic and demographic assumptions are met. No cost-of-living-adjustments (i.e., COLAs) are assumed. |
| **New Entrants** | New entrants are assumed to replace participants who exit such that the total headcount remains constant. The new entrants' age, salary, etc. is based on hires over the last 5 years |
| **Salary Increases** | 5.00% |
| **Payroll Growth** | ~2.50% (see Appendices for details; Not used for Unfunded amortization payment) |
| **Discount Rate** | 7.50% |
| **Investment Return** | 7.50% (unless specifically stated) |
| **Market Value of Assets** | $84.8M as of January 1, 2014; projected at $80.6M as of January 1, 2015 |
| **Actuarial Value of Assets** | Reset to Market Value of Assets as of January 1, 2015<br>Seven-year smoothing of investment gains/losses with 20% corridor around market value |
| **Employer Contribution** | Assumes City contributions of $14.3M for FY '14 and $24.4M for FY '15<br>Residual amount to meet actuarially determined contribution beginning FY '16 unless specifically stated; Consists of Net Normal Cost and payment on Unfunded Actuarial Accrued Liability (UAAL); Payment on UAAL based on closed 30-year, level-dollar amortization |
| **Employee Contributions** | 8.00% and 3.33% of pay for 2014 for participants with less than or more than 20 years of service respectively<br>10.00% and 6.66% of pay for 2015 for participants with less than or more than 20 years of service respectively<br>10.00% of pay for years after 2015 and thereafter for all participants |
| **Funding Method** | Entry Age Normal |
| **Administrative Expenses** | $0.2M; increasing 3.0% annually |

**NOTE: Projections due not include cash contributions resulting from the settlement agreement, nor longevity payments in dispute.**

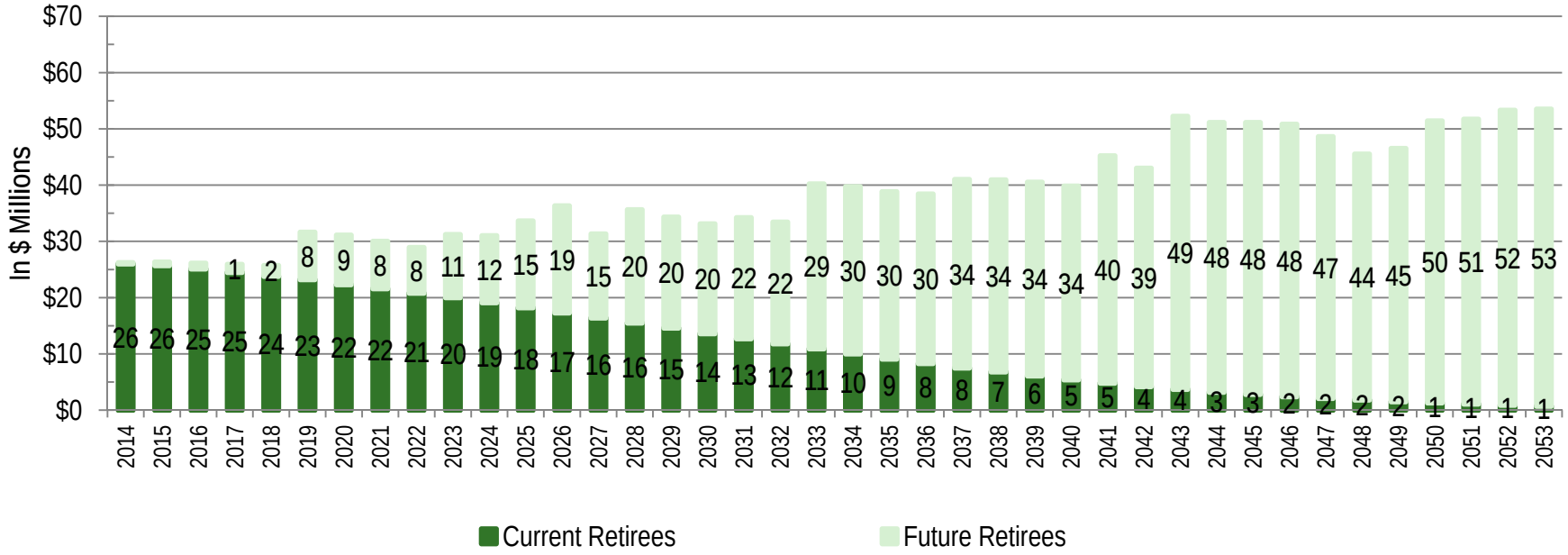
# Summary of Scenarios

- Segal Consulting was asked to model future plan cost and liabilities based on the current set of actuarial assumptions and methods, as a baseline.
- There are many variables in projecting pension cost including the employer contribution amount, investment return and cash outflows.
- We have chosen to show scenarios which provide a range of possibilities. The primary difference in the scenarios is how much the City will contribute annually and when the DROP/PLOP account balances are paid.
- Segal modeled the following scenarios:
  - ✓ **Scenario #1 (Pay ARC):** pay 100% of Actuarially Recommended Contribution (ARC) with no immediate payments for DROP/PLOP account balances
  - ✓ **Scenario #2 (Pay 50% of ARC, 50% of DROP/PLOP balances paid immediately):** pay 50% of ARC with 50% of DROP/PLOP account balances paid immediately
  - ✓ **Scenario #3 (~Pay-as-you-go):** pay $14.3 million annually until Fund runs out of money, then begin paying benefits from General cash flow, 100% of DROP/PLOP account balances paid immediately

# Projected Benefit Payments

The Plan is projected to be paying benefits to current participants in 50 years:

- The benefits to current retirees (i.e., participants in-pay status) decline gradually over time with the projected payments cut in half in about 15 years (~2031), but with some payments continuing for the next 50 years.
- The benefit payments to future retirees spikes in years when a significant number of participants exit the DROP.
- The payments to current active participants peaks in about 30 years at around $40 million. However, the payments to future retirees continues to grow due to future hires.

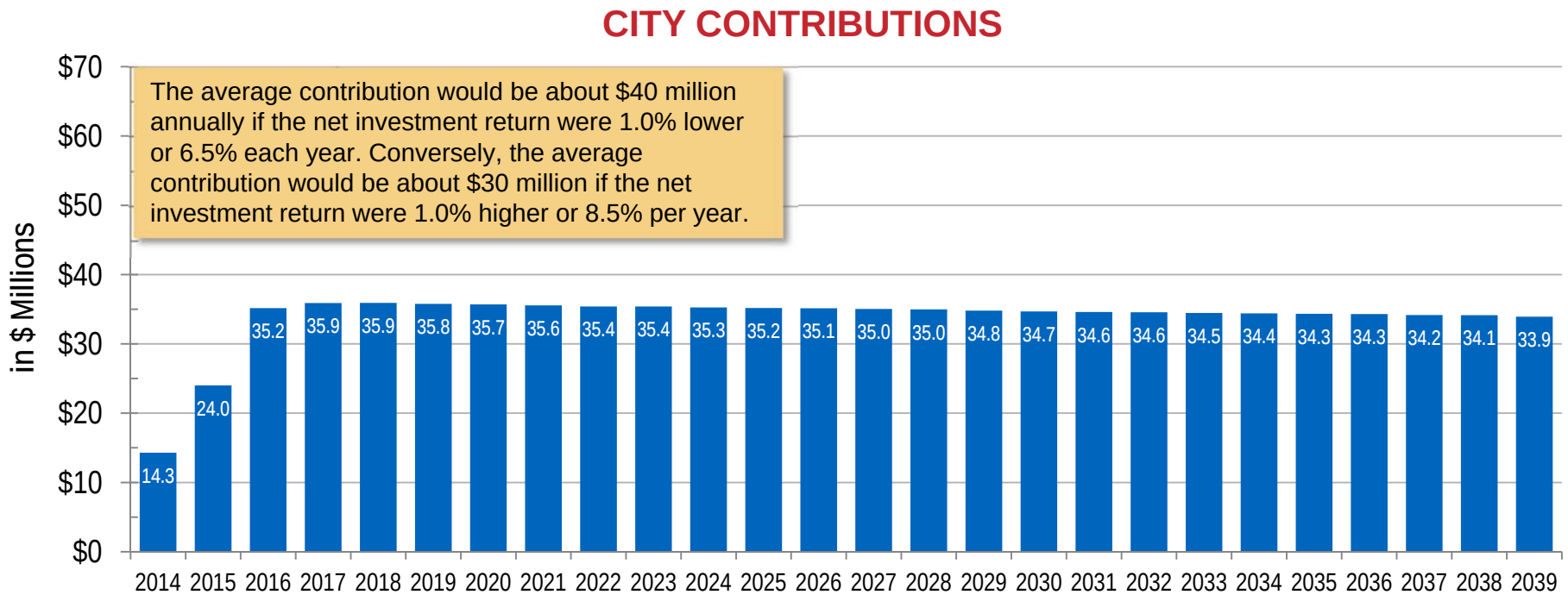


# Projected Cost

*Scenario #1 (Pay ARC)*

**The following are the projected City pension contributions under the current plan based on the "baseline" assumptions and assuming the City contributes 100% of the Annual Recommended Contribution (ARC) annually.**

- The cost would be, on average, about $5.0 million higher/lower annually if the investment return were 1.0% lower/higher annually.
- The contributions would be essentially unchanged if the DROP/PLOP account balances were assumed to be paid immediately, since it would have no impact on the Unfunded Liability.




**Note:** Assumes City contributes 100% of ARC annually beginning in FY '16.

# Cash Flow Projections

*Scenario #1 (Pay ARC)*

| | (A) | (B) | (C ) | (D) | (E) | (F) | (G) | (H) | (I) |
|---|---|---|---|---|---|---|---|---|---|
| | Contributions | | Disbursements | | | | | | |
| Year | Employee | City | Benefit Payments | Expenses | Net Cash Flow | Net Investment Return @ 7.50% | Market Value of Assets (MVA), EoY | Funded Percentage[1] (MVA/AAL) | Unfunded[1] (MVA - AAL) |
| 2014 | $2.0 | *$14.3* | ($26.3) | ($0.2) | ($10.2) | $6.0 | $80.6 | 17.7% | $393.7 |
| 2015 | $2.7 | *$24.0* | ($26.3) | ($0.2) | $0.2 | $6.1 | $86.9 | 18.9% | $344.6 |
| 2016 | $3.0 | $35.2 | ($26.1) | ($0.2) | $11.9 | $7.0 | $105.8 | 19.9% | $350.4 |
| 2017 | $3.1 | $35.9 | ($25.9) | ($0.2) | $12.9 | $8.4 | $127.1 | 23.4% | $345.0 |
| 2018 | $3.1 | $35.9 | ($25.7) | ($0.2) | $13.1 | $10.0 | $150.2 | 27.3% | $338.7 |
| 2019 | $3.2 | $35.8 | ($31.6) | ($0.2) | $7.2 | $11.5 | $168.9 | 31.1% | $331.9 |
| 2020 | $3.3 | $35.7 | ($31.1) | ($0.2) | $7.7 | $13.0 | $189.6 | 34.2% | $324.7 |
| 2021 | $3.3 | $35.6 | ($30.0) | ($0.2) | $8.7 | $14.5 | $212.8 | 37.4% | $317.1 |
| 2022 | $3.4 | $35.4 | ($28.9) | ($0.3) | $9.6 | $16.3 | $238.7 | 40.7% | $309.1 |
| 2023 | $3.5 | $35.4 | ($31.2) | ($0.3) | $7.4 | $18.2 | $264.3 | 44.2% | $301.3 |
| 2024 | $3.6 | $35.3 | ($31.0) | ($0.3) | $7.6 | $20.1 | $292.0 | 47.4% | $292.8 |
| 2025 | $3.7 | $35.2 | ($33.6) | ($0.3) | $5.0 | $22.1 | $319.1 | 50.7% | $284.1 |
| 2026 | $3.8 | $35.1 | ($36.3) | ($0.3) | $2.3 | $24.0 | $345.4 | 53.7% | $275.0 |
| 2027 | $3.9 | $35.0 | ($31.2) | ($0.3) | $7.4 | $26.2 | $379.0 | 56.5% | $265.2 |
| 2028 | $3.9 | $35.0 | ($35.6) | ($0.3) | $3.0 | $28.5 | $410.5 | 59.7% | $255.4 |
| 2029 | $3.9 | $34.8 | ($34.3) | ($0.3) | $4.1 | $30.9 | $445.5 | 62.6% | $244.5 |
| 2030 | $4.0 | $34.7 | ($33.1) | ($0.3) | $5.3 | $33.6 | $484.4 | 65.6% | $233.4 |
| 2031 | $4.1 | $34.6 | ($34.2) | ($0.3) | $4.2 | $36.5 | $525.1 | 68.6% | $221.7 |
| 2032 | $4.2 | $34.6 | ($33.4) | ($0.3) | $5.1 | $39.6 | $569.8 | 71.5% | $209.5 |
| 2033 | $4.3 | $34.5 | ($40.1) | ($0.4) | ($1.7) | $42.7 | $610.8 | 74.3% | $196.7 |
| 2034 | $4.4 | $34.4 | ($39.7) | ($0.4) | ($1.3) | $45.8 | $655.3 | 76.9% | $182.9 |
| 2035 | $4.5 | $34.3 | ($38.9) | ($0.4) | ($0.5) | $49.1 | $703.9 | 79.5% | $168.6 |
| 2036 | $4.5 | $34.3 | ($38.4) | ($0.4) | $0.0 | $52.8 | $756.7 | 82.1% | $153.7 |
| 2037 | $4.6 | $34.2 | ($41.0) | ($0.4) | ($2.6) | $56.7 | $810.8 | 84.6% | $137.7 |
| 2038 | $4.6 | $34.1 | ($40.9) | ($0.4) | ($2.6) | $60.7 | $868.9 | 87.0% | $120.9 |
| 2039 | $4.7 | $33.9 | ($40.4) | ($0.4) | ($2.2) | $65.1 | $931.8 | 89.4% | $102.7 |
| 2040 | $4.8 | $33.7 | ($39.8) | ($0.4) | ($1.7) | $69.8 | $999.9 | 91.8% | $83.6 |
| 2041 | $4.9 | $33.5 | ($45.2) | ($0.4) | ($7.2) | $74.7 | $1,067.4 | 94.0% | $63.5 |
| 2042 | $5.1 | $33.1 | ($43.1) | ($0.5) | ($5.4) | $79.9 | $1,141.9 | 96.2% | $42.1 |
| 2043 | $5.3 | $32.4 | ($52.2) | ($0.5) | ($15.0) | $85.1 | $1,212.0 | 98.3% | $19.8 |
| Total | $117.4 | $1,009.9 | ($1,045.5) | ($9.5) | $72.3 | $1,054.9 | | | |
| Present Value | $55.5 | $508.3 | ($499.2) | ($4.3) | $60.2 | $401.9 | | | |

[1] Beginning of the year.

Assumes City contributes ARC beginning in FY '16

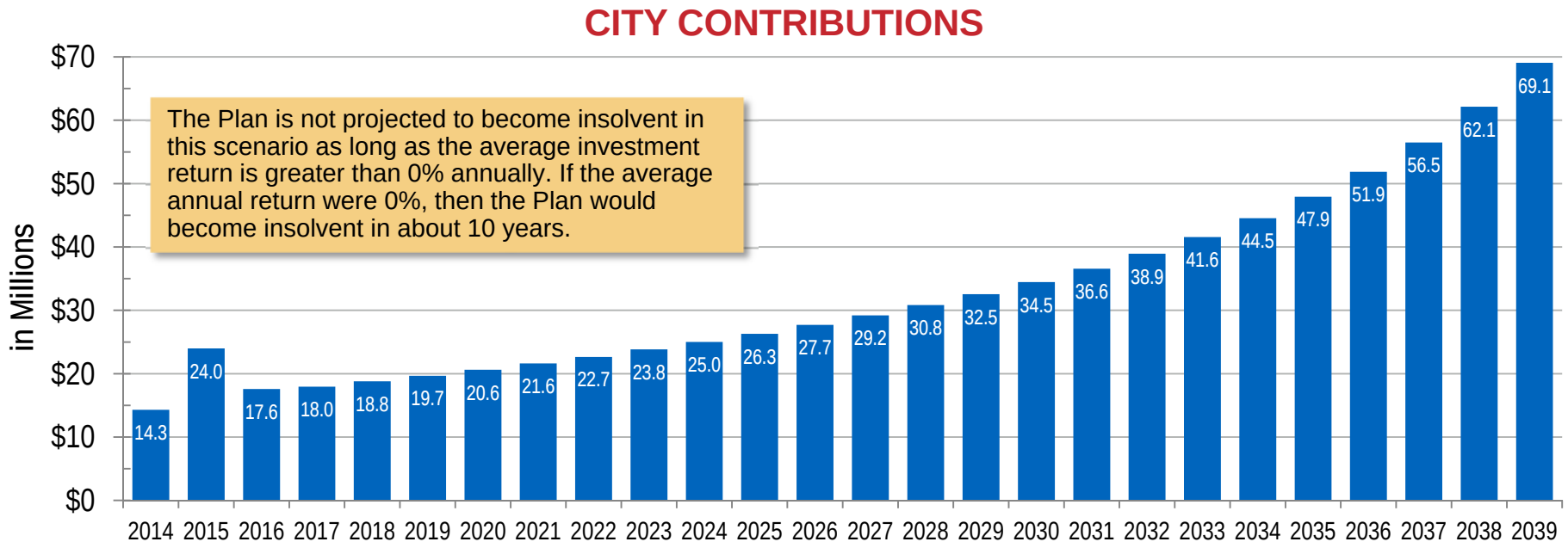
Present Value (i.e., total amount in today's dollars) determined using 5.0% cost of capital.

# Projected Cost

*Scenario #2 (Pay 50% of ARC; 50% of DROP/PLOP Paid Immediately)*

**The following are the projected City pension contributions under the current plan based on the "baseline" assumptions and assuming the City contributes 50% of the Annual Recommended Contribution (ARC) annually and 50% of the DROP/PLOP account balances are paid immediately.**

- The Plan is not projected to become insolvent if only 50% of the ARC is paid annually and 50% of the DROP/PLOP account balances are paid immediately if the average annual investment return is greater than 0.0%.
- However, the Plan is projected to become insolvent in about 6 years if 100% of the DROP/PLOP account balances are paid immediately. The date of insolvency is not materially impacted by the investment return if 100% of the DROP/PLOP account balances are paid immediately due to the negative cash flow.




**NOTE:** Assumes City contributes 50% of ARC annually until assets exhausted; then contributes pay-as-you-go cost.

# Cash Flow Projections

*Scenario #2 (Pay 50% of ARC; 50% of DROP/PLOP Paid Immediately)*

| | (A) | (B) | (C ) | (D) | (E) | (F) | (G) | (H) | (I) |
|---|---|---|---|---|---|---|---|---|---|
| | Contributions | | Disbursements | | | | | | |
| Year | Employee | City | Benefit Payments | Expenses | Net Cash Flow | Net Investment Return @ 7.50% | Market Value of Assets (MVA), EoY | Funded Percentage[1] (MVA/AAL) | Unfunded[1] (MVA - AAL) |
| 2014 | *$2.0* | *$14.3* | ($26.3) | ($0.2) | ($10.2) | $6.0 | $80.6 | 17.7% | $393.7 |
| 2015 | $2.7 | $24.0 | ($61.5) | ($0.2) | ($35.0) | $4.7 | $50.3 | 18.9% | $344.6 |
| 2016 | $3.0 | $17.6 | ($26.1) | ($0.2) | ($5.7) | $3.6 | $48.2 | 12.5% | $351.8 |
| 2017 | $3.1 | $18.0 | ($25.9) | ($0.2) | ($5.0) | $3.4 | $46.6 | 11.7% | $364.7 |
| 2018 | $3.1 | $18.8 | ($25.7) | ($0.2) | ($4.0) | $3.3 | $45.9 | 10.9% | $378.5 |
| 2019 | $3.2 | $19.7 | ($31.6) | ($0.2) | ($8.9) | $3.1 | $40.1 | 10.5% | $392.4 |
| 2020 | $3.3 | $20.6 | ($31.1) | ($0.2) | ($7.4) | $2.7 | $35.4 | 9.0% | $406.4 |
| 2021 | $3.3 | $21.6 | ($30.0) | ($0.2) | ($5.3) | $2.5 | $32.6 | 7.8% | $420.5 |
| 2022 | $3.4 | $22.7 | ($28.9) | ($0.3) | ($3.1) | $2.3 | $31.8 | 7.0% | $434.8 |
| 2023 | $3.5 | $23.8 | ($31.2) | ($0.3) | ($4.2) | $2.2 | $29.8 | 6.6% | $449.7 |
| 2024 | $3.6 | $25.0 | ($31.0) | ($0.3) | ($2.7) | $2.1 | $29.2 | 6.0% | $464.3 |
| 2025 | $3.7 | $26.3 | ($33.6) | ($0.3) | ($3.9) | $2.0 | $27.3 | 5.8% | $479.0 |
| 2026 | $3.8 | $27.7 | ($36.3) | ($0.3) | ($5.1) | $1.9 | $24.1 | 5.3% | $493.7 |
| 2027 | $3.9 | $29.2 | ($31.2) | ($0.3) | $1.6 | $1.9 | $27.6 | 4.5% | $508.1 |
| 2028 | $3.9 | $30.8 | ($35.6) | ($0.3) | ($1.2) | $2.0 | $28.4 | 5.0% | $522.5 |
| 2029 | $3.9 | $32.5 | ($34.3) | ($0.3) | $1.8 | $2.2 | $32.4 | 5.0% | $536.0 |
| 2030 | $4.0 | $34.5 | ($33.1) | ($0.3) | $5.1 | $2.6 | $40.1 | 5.6% | $549.0 |
| 2031 | $4.1 | $36.6 | ($34.2) | ($0.3) | $6.2 | $3.2 | $49.5 | 6.7% | $561.3 |
| 2032 | $4.2 | $38.9 | ($33.4) | ($0.3) | $9.4 | $4.1 | $63.0 | 8.0% | $572.5 |
| 2033 | $4.3 | $41.6 | ($40.1) | ($0.4) | $5.4 | $4.9 | $73.3 | 9.7% | $582.3 |
| 2034 | $4.4 | $44.5 | ($39.7) | ($0.4) | $8.8 | $5.8 | $87.9 | 11.0% | $590.2 |
| 2035 | $4.5 | $47.9 | ($38.9) | ($0.4) | $13.1 | $7.1 | $108.1 | 12.8% | $595.8 |
| 2036 | $4.5 | $51.9 | ($38.4) | ($0.4) | $17.6 | $8.8 | $134.5 | 15.3% | $598.9 |
| 2037 | $4.6 | $56.5 | ($41.0) | ($0.4) | $19.7 | $10.8 | $165.0 | 18.3% | $598.0 |
| 2038 | $4.6 | $62.1 | ($40.9) | ($0.4) | $25.4 | $13.3 | $203.7 | 21.8% | $592.6 |
| 2039 | $4.7 | $69.1 | ($40.4) | ($0.4) | $33.0 | $16.5 | $253.2 | 26.0% | $580.7 |
| 2040 | $4.8 | $78.1 | ($39.8) | ($0.4) | $42.7 | $20.6 | $316.5 | 31.1% | $561.0 |
| 2041 | $4.9 | $90.6 | ($45.2) | ($0.4) | $49.9 | $25.6 | $392.0 | 37.4% | $530.7 |
| 2042 | $5.1 | $109.7 | ($43.1) | ($0.5) | $71.2 | $32.1 | $495.3 | 44.7% | $485.0 |
| 2043 | $5.3 | $144.1 | ($52.2) | ($0.5) | $96.7 | $40.8 | $632.8 | 54.3% | $416.6 |
| Total | $117.4 | $1,278.7 | ($1,080.7) | ($9.5) | $305.9 | $242.1 | | | |
| PV | $55.5 | $511.6 | ($531.2) | ($4.3) | $31.6 | $63.5 | | | |

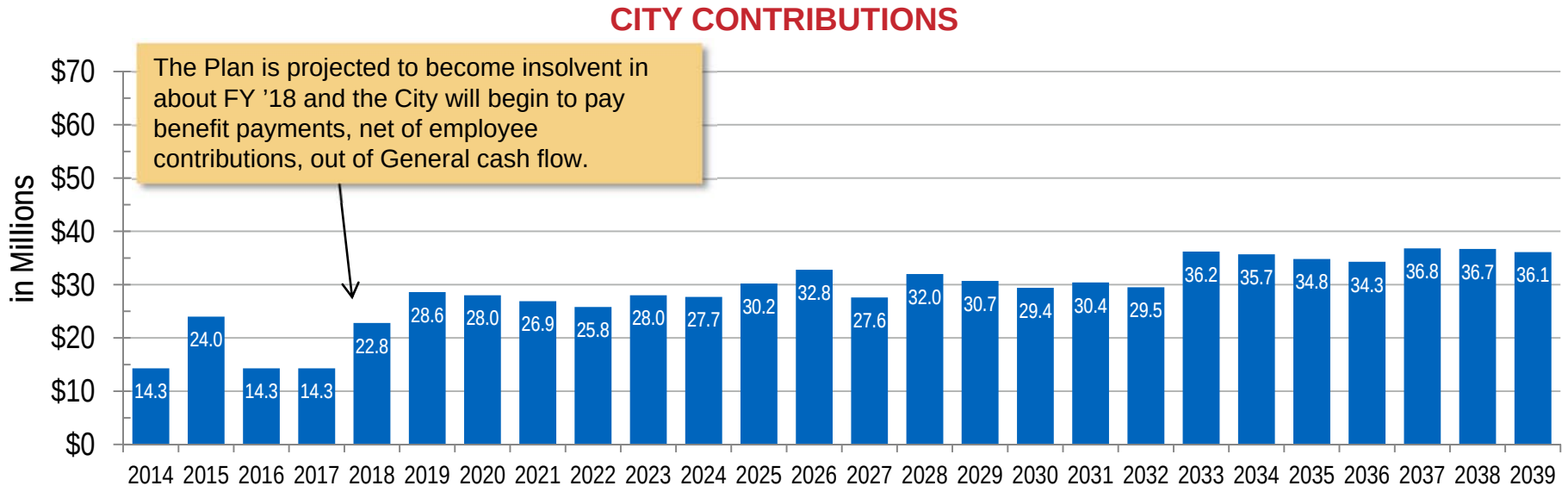
[1] Beginning of the year.
Present Value (i.e., total amount in today's dollars) determined using 5.0% cost of capital.

# Projected Cost

*Scenario #3 (~Pay-as-you-go)*

**The following are the projected City pension contributions under the current plan based on the "baseline" assumptions and assuming the City contributes $14.3 million annually and 100% of the DROP/PLOP account balances are paid immediately.**

- The Plan is projected to become insolvent in about 3 years if 100% of the DROP/PLOP account balances are paid immediately and the City doesn't contribute the full ARC.
- If the Plan becomes insolvent, the City will be responsible for the benefits on a pay-as-you-go basis. The date of insolvency is not materially impacted by the investment return in this scenario.
- However, the date of insolvency is impacted by when/if the DROP/PLOP account balances are assumed to be paid. The insolvency date would be about 4 years later if 50% of the DROP/PLOP account balances were assumed to be paid immediately.




**NOTE:** Assumes City contributes $14.3 million annually until assets exhausted; then contributes pay-as-you-go cost.

# Cash Flow Projections

*Scenario #3 (~Pay-as-you-go)*

| | (A) | (B) | (C ) | (D) | (E) | (F) | (G) | (H) | (I) |
|---|---|---|---|---|---|---|---|---|---|
| | Contributions | | Disbursements | | | | | | |
| Year | Employee | City | Benefit Payments | Expenses | Net Cash Flow | Net Investment Return @ 7.50% | Market Value of Assets (MVA), EoY | Funded Percentage[1] (MVA/AAL) | Unfunded[1] (MVA - AAL) |
| 2014 | *$2.0* | *$14.3* | ($26.3) | ($0.2) | ($10.2) | $6.0 | $80.6 | 17.7% | $393.7 |
| 2015 | $2.7 | $24.0 | ($96.7) | ($0.2) | ($70.2) | $3.4 | $13.8 | 18.9% | $344.6 |
| 2016 | $3.0 | $14.3 | ($26.1) | ($0.2) | ($9.0) | $0.7 | $5.5 | 4.4% | $352.0 |
| 2017 | $3.1 | $14.3 | ($25.9) | ($0.2) | ($8.7) | | | 2.2% | $368.4 |
| 2018 | $3.1 | $22.8 | ($25.7) | ($0.2) | $0.0 | | | | $386.1 |
| 2019 | $3.2 | $28.6 | ($31.6) | ($0.2) | $0.0 | | | | $396.5 |
| 2020 | $3.3 | $28.0 | ($31.1) | ($0.2) | $0.0 | | | | $401.5 |
| 2021 | $3.3 | $26.9 | ($30.0) | ($0.2) | $0.0 | | | | $407.6 |
| 2022 | $3.4 | $25.8 | ($28.9) | ($0.3) | $0.0 | | | | $415.4 |
| 2023 | $3.5 | $28.0 | ($31.2) | ($0.3) | $0.0 | | | | $425.6 |
| 2024 | $3.6 | $27.7 | ($31.0) | ($0.3) | $0.0 | | | | $434.1 |
| 2025 | $3.7 | $30.2 | ($33.6) | ($0.3) | $0.0 | | | | $443.8 |
| 2026 | $3.8 | $32.8 | ($36.3) | ($0.3) | $0.0 | | | | $451.8 |
| 2027 | $3.9 | $27.6 | ($31.2) | ($0.3) | $0.0 | | | | $457.7 |
| 2028 | $3.9 | $32.0 | ($35.6) | ($0.3) | $0.0 | | | | $469.9 |
| 2029 | $3.9 | $30.7 | ($34.3) | ($0.3) | $0.0 | | | | $478.2 |
| 2030 | $4.0 | $29.4 | ($33.1) | ($0.3) | $0.0 | | | | $488.9 |
| 2031 | $4.1 | $30.4 | ($34.2) | ($0.3) | $0.0 | | | | $501.8 |
| 2032 | $4.2 | $29.5 | ($33.4) | ($0.3) | $0.0 | | | | $515.0 |
| 2033 | $4.3 | $36.2 | ($40.1) | ($0.4) | $0.0 | | | | $530.2 |
| 2034 | $4.4 | $35.7 | ($39.7) | ($0.4) | $0.0 | | | | $539.7 |
| 2035 | $4.5 | $34.8 | ($38.9) | ($0.4) | $0.0 | | | | $550.7 |
| 2036 | $4.5 | $34.3 | ($38.4) | ($0.4) | $0.0 | | | | $564.0 |
| 2037 | $4.6 | $36.8 | ($41.0) | ($0.4) | $0.0 | | | | $578.8 |
| 2038 | $4.6 | $36.7 | ($40.9) | ($0.4) | $0.0 | | | | $592.4 |
| 2039 | $4.7 | $36.1 | ($40.4) | ($0.4) | $0.0 | | | | $606.9 |
| 2040 | $4.8 | $35.4 | ($39.8) | ($0.4) | $0.0 | | | | $623.4 |
| 2041 | $4.9 | $40.7 | ($45.2) | ($0.4) | $0.0 | | | | $641.9 |
| 2042 | $5.1 | $38.5 | ($43.1) | ($0.5) | $0.0 | | | | $656.4 |
| 2043 | $5.3 | $47.4 | ($52.2) | ($0.5) | $0.0 | | | | $674.7 |
| Total | $117.4 | $909.9 | ($1,115.9) | ($9.5) | ($98.1) | $10.2 | | | |
| Present Value | $55.5 | $423.7 | ($563.1) | ($4.3) | ($88.3) | $9.2 | | | |

Note the decrease in the funded percentage from about 18.9% to about 4.4% if the PLOP/DROP payments are made immediately.

[1] Beginning of the year.
Present Value (i.e., total amount in today's dollars) determined using 5.0% cost of capital.

I. Background

II. Projections

III. Impact of Pre-Funding

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# Impact of Pre-Funding Summary

- The Plan has $84.8 million of assets as of January 1, 2014 and is projected to pay benefit payments of about $26.3 million during the upcoming year.
- The ARC for FY ’14 is about $27.5 million and it is assumed the City will contribute about 50% of the ARC, or about $14.3 million during 2014. Thus the assets are projected to be about $80.6 million as of January 1, 2015.
- The Plan is at significant risk of becoming insolvent under all of the scenarios unless the City contributes the full ARC.
- If the Plan runs out of money (i.e., becomes insolvent), the City will be responsible for the benefits on a pay-as-you-go basis.
- The sooner the Plan becomes insolvent and the City begins contributing the pay-as-you-go cost, the more money it will cost the City:
  - **Scenario #2 (Pay 50% of ARC, 50% of DROP/PLOP account balances paid immediately):** City will pay about $665.6 million more over 30 years on nominal basis and about $95.1 million more in today’s dollars (i.e., present value)
  - **Scenario #3 (~Pay-as-you-go):** City will pay about $554.4 million more over 30 years on nominal basis and about $66.8 million more in today’s dollars (i.e., present value)

# *Projected City Pension Cost Comparison*

| Fiscal Year | Annual City Contributions (in millions) | | |
|---|---|---|---|
| | Scenario #1 | Scenario #2 | Scenario #3 |
| 2014 | $14.3 | $14.3 | $14.3 |
| 2015 | $24.0 | $24.0 | $24.0 |
| 2016 | $35.2 | $17.6 | $14.3 |
| 2017 | $35.9 | $18.0 | $14.3 |
| 2018 | $35.9 | $18.8 | $22.8 |
| 2019 | $35.8 | $19.7 | $28.6 |
| 2020 | $35.7 | $20.6 | $28.0 |
| 2021 | $35.6 | $21.6 | $26.9 |
| 2022 | $35.4 | $22.7 | $25.8 |
| 2023 | $35.4 | $23.8 | $28.0 |
| 2024 | $35.3 | $25.0 | $27.7 |
| 2025 | $35.2 | $26.3 | $30.2 |
| 2026 | $35.1 | $27.7 | $32.8 |
| 2027 | $35.0 | $29.2 | $27.6 |
| 2028 | $35.0 | $30.8 | $32.0 |
| 2029 | $34.8 | $32.5 | $30.7 |
| 2030 | $34.7 | $34.5 | $29.4 |
| 2031 | $34.6 | $36.6 | $30.4 |
| 2032 | $34.6 | $38.9 | $29.5 |
| 2033 | $34.5 | $41.6 | $36.2 |
| 2034 | $34.4 | $44.5 | $35.7 |
| 2035 | $34.3 | $47.9 | $34.8 |
| 2036 | $34.3 | $51.9 | $34.3 |
| 2037 | $34.2 | $56.5 | $36.8 |
| 2038 | $34.1 | $62.1 | $36.7 |
| 2039 | $33.9 | $69.1 | $36.1 |
| 2040 | $33.7 | $78.1 | $35.4 |
| 2041 | $33.5 | $90.6 | $40.7 |
| 2042 | $33.1 | $109.7 | $38.5 |
| 2043[1] | $52.2 | $560.7 | $721.6 |
| **Total** | **$1,029.7** | **$1,695.3** | **$1,584.1** |
| **Present Value @ 5.0%** | **$512.9** | **$608.0** | **$579.7** |

- **Scenario #1:** Pay ARC annually, no other changes
- **Scenario #2:** 50% of PLOP/DROP account balances paid immediately; Pay 50% of ARC
- **Scenario #3:** 100% of PLOP/DROP account balances paid immediately; Pay $14.3 million annually until assets exhausted, then contributes pay-as-you-go cost

[1] Includes Unfunded amount in 30 years ($19.8M for Scenario #1; $416.6M for Scenario #1; $674.7M for Scenario #3).

# Questions?


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# Appendices
## *Glossary of Terms*

| | |
|---|---|
| Actuarial Accrued Liability (AAL) | The portion of the Present Value of Projected Benefits (PVB) that has been accrued (or earned) to date. AAL is also expressed as difference between PVB and actuarial present value of future normal costs, or the accumulated normal costs attributable to the years before the valuation date. |
| Annual Required Contribution (ARC) | Sum of Normal Cost (NC) and amortization of Unfunded Actuarial Accrued Liability (UAAL). This is the amount actuarially determined to ensure that, if paid on an ongoing basis, there will be sufficient resources available for future benefit payments. |
| Normal Cost (NC) | Represents portion of PVB allocated to the current year by the funding method. |
| Present Value of Projected Benefits (PVB) | Present value of all future benefit payments for current retirees and active employees, taking into account actuarial assumptions including discount rate, Salary growth, turnover, mortality, disability, retirement and other experience. |
| Unfunded Actuarial Accrued Liability (UAAL) | The difference between the Actuarial Accrued Liability and the Actuarial Value of Assets. |

# Appendices
## Projected Counts and Payroll

| January 1 | Active Headcount | | |
|---|---|---|---|
| | Current Participants | Future Hires | Total |
| 2014 | 553 | | 553 |
| 2015 | 523 | 30 | 553 |
| 2016 | 501 | 52 | 553 |
| 2017 | 479 | 74 | 553 |
| 2018 | 461 | 92 | 553 |
| 2019 | 436 | 117 | 553 |
| 2020 | 412 | 141 | 553 |
| 2021 | 386 | 167 | 553 |
| 2022 | 357 | 196 | 553 |
| 2023 | 340 | 213 | 553 |
| 2024 | 317 | 236 | 553 |
| 2025 | 295 | 258 | 553 |
| 2026 | 278 | 275 | 553 |
| 2027 | 261 | 292 | 553 |
| 2028 | 245 | 308 | 553 |
| 2029 | 220 | 333 | 553 |
| 2030 | 198 | 355 | 553 |
| 2031 | 178 | 375 | 553 |
| 2032 | 161 | 392 | 553 |
| 2033 | 143 | 410 | 553 |
| 2034 | 128 | 425 | 553 |
| 2035 | 113 | 440 | 553 |
| 2036 | 101 | 452 | 553 |
| 2037 | 81 | 472 | 553 |
| 2038 | 67 | 486 | 553 |
| 2039 | 45 | 508 | 553 |
| 2040 | 27 | 526 | 553 |
| 2041 | 15 | 538 | 553 |
| 2042 | 5 | 548 | 553 |
| 2043 | 0 | 553 | 553 |

| January 1 | Covered Payroll | | | |
|---|---|---|---|---|
| | Current Participants | Future Hires | Total | % Increase |
| 2014 | $29.4 | $0.0 | **$29.4** | |
| 2015 | $28.9 | $1.1 | **$30.0** | 2.1% |
| 2016 | $28.7 | $1.9 | **$30.7** | 2.2% |
| 2017 | $28.7 | $2.9 | **$31.5** | 2.8% |
| 2018 | $28.8 | $3.7 | **$32.5** | 3.2% |
| 2019 | $28.4 | $4.9 | **$33.2** | 2.2% |
| 2020 | $28.0 | $6.1 | **$34.1** | 2.6% |
| 2021 | $27.2 | $7.5 | **$34.7** | 1.6% |
| 2022 | $26.0 | $9.1 | **$35.1** | 1.3% |
| 2023 | $25.9 | $10.2 | **$36.2** | 3.1% |
| 2024 | $25.0 | $11.8 | **$36.8** | 1.7% |
| 2025 | $24.3 | $13.4 | **$37.7** | 2.4% |
| 2026 | $23.9 | $14.8 | **$38.7** | 2.7% |
| 2027 | $23.3 | $16.3 | **$39.6** | 2.4% |
| 2028 | $22.8 | $17.9 | **$40.7** | 2.6% |
| 2029 | $21.1 | $20.0 | **$41.0** | 0.9% |
| 2030 | $19.6 | $22.0 | **$41.6** | 1.5% |
| 2031 | $18.3 | $24.1 | **$42.4** | 1.8% |
| 2032 | $17.2 | $26.1 | **$43.4** | 2.2% |
| 2033 | $15.9 | $28.3 | **$44.2** | 1.9% |
| 2034 | $14.7 | $30.4 | **$45.1** | 2.1% |
| 2035 | $13.6 | $32.6 | **$46.2** | 2.4% |
| 2036 | $12.7 | $34.8 | **$47.5** | 2.8% |
| 2037 | $10.7 | $37.5 | **$48.2** | 1.5% |
| 2038 | $9.3 | $40.0 | **$49.2** | 2.1% |
| 2039 | $6.4 | $43.0 | **$49.5** | 0.5% |
| 2040 | $4.1 | $46.0 | **$50.1** | 1.3% |
| 2041 | $2.3 | $48.7 | **$51.0** | 1.7% |
| 2042 | $0.8 | $51.2 | **$52.0** | 2.0% |
| 2043 | $0.0 | $53.4 | **$53.4** | 2.7% |

# Appendices

*Projected Normal Cost*

| January 1 | Normal Cost | | | |
|---|---|---|---|---|
| | Gross | Employee Contributions | Net | Net as % of Pay |
| 2015 | $6.9 | ($2.7) | $4.2 | **13.8%** |
| 2016 | $7.0 | ($3.0) | $4.0 | **13.1%** |
| 2017 | $7.3 | ($3.1) | $4.2 | **13.2%** |
| 2018 | $7.3 | ($3.1) | $4.2 | **12.9%** |
| 2019 | $7.5 | ($3.2) | $4.3 | **13.0%** |
| 2020 | $7.7 | ($3.3) | $4.4 | **12.9%** |
| 2021 | $7.8 | ($3.3) | $4.5 | **12.9%** |
| 2022 | $8.1 | ($3.4) | $4.7 | **13.3%** |
| 2023 | $8.2 | ($3.5) | $4.7 | **13.0%** |
| 2024 | $8.4 | ($3.6) | $4.8 | **13.1%** |
| 2025 | $8.7 | ($3.7) | $5.0 | **13.2%** |
| 2026 | $8.9 | ($3.8) | $5.1 | **13.2%** |
| 2027 | $9.1 | ($3.9) | $5.2 | **13.2%** |
| 2028 | $9.1 | ($3.9) | $5.2 | **12.8%** |
| 2029 | $9.3 | ($3.9) | $5.4 | **13.0%** |
| 2030 | $9.5 | ($4.0) | $5.5 | **13.1%** |
| 2031 | $9.7 | ($4.1) | $5.6 | **13.3%** |
| 2032 | $9.9 | ($4.2) | $5.7 | **13.2%** |
| 2033 | $10.2 | ($4.3) | $5.9 | **13.3%** |
| 2034 | $10.4 | ($4.4) | $6.0 | **13.3%** |
| 2035 | $10.7 | ($4.5) | $6.2 | **13.4%** |
| 2036 | $10.8 | ($4.5) | $6.3 | **13.1%** |
| 2037 | $11.1 | ($4.6) | $6.5 | **13.4%** |
| 2038 | $11.1 | ($4.6) | $6.5 | **13.2%** |
| 2039 | $11.4 | ($4.7) | $6.7 | **13.5%** |
| 2040 | $11.6 | ($4.8) | $6.8 | **13.6%** |
| 2041 | $11.9 | ($4.9) | $7.0 | **13.8%** |
| 2042 | $12.4 | ($5.1) | $7.3 | **13.9%** |
| 2043 | $12.8 | ($5.3) | $7.5 | **14.0%** |

# Appendices

*Comparison of Projected Funded Percentages*

- **Scenario #1:** Pay ARC annually, no other changes
- **Scenario #2:** 50% of PLOP/DROP account balances paid immediately; Pay 50% of ARC
- **Scenario #3:** 100% of PLOP/DROP account balances paid immediately; Pay $14.3 million annually until assets exhausted, then begin contributing pay-as-you-go cost