## Retirement Plan For CTA Employees

January 1, 2011 Actuarial Valuation

Prepared by PricewaterhouseCoopers LLP
September 2011

Board of Trustees and Executive Director
Retirement Plan for CTA Employees
10 S. LaSalle Suite 1100
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## Re: Actuarial Valuation Report and Actuarial Certification as of January 1, 2011

This report presents the results of the annual valuation of the assets and liabilities of The Retirement Plan for Chicago Transit Authority Employees ("the Plan") as of January 1, 2011, prepared in accordance with 40 ILCS 5/22-101(e). In addition, it includes disclosure information as of December 31, 2010, as required under GASB Statements No. 25 and 27. The actuarial valuation of the Plan is performed annually and the Plan retained PricewaterhouseCoopers LLP to perform the valuation as of January 1, 2011. This valuation has been conducted in accordance with the required Actuarial Standards of Practice issued by the American Academy of Actuaries.

Public Act 94-839, effective June 6, 2006, requires that the Plan's pension and retiree healthcare programs be separated into two distinct trusts by December 31, 2008. This January 1, 2011 valuation report for the Plan does not reflect the liabilities and assets that were spun off in the healthcare trust.

Public Act 95-708, effective January 18, 2008, allowed the Chicago Transit Authority to issue pension obligation bonds and deposit $\$ 1.1105$ billion into the pension trust. Public Act $95-708$ revised the level-percent-of-pay policy to the contribution rates that produce no less than 60 percent funding for each year up to and including fiscal year 2039 and 90 percent funding by fiscal year end 2059.

This valuation was based on the actuarial assumptions and methods as adopted by the Board of Trustees, including a valuation interest rate of $8.50 \%$ per annum, compounded annually. Please see Section IV of this report for a description of the assumptions and methods used.

## Actuarial Assumptions

The actuarial assumptions and methods comply with the parameters set forth in Governmental Accounting Standards No. 25. The demographic assumptions, including the withdrawal, active death, retirement, and retiree mortality rates reflect the past experience and the expected future experience of the System.

## Assets and Membership Data

The Retirement Plan for CTA Employees reported to the actuary the individual data for Plan participants as of the valuation date. While we did not verify the data at their source, we did perform tests for internal consistency and reasonableness. The amount of assets in the trust fund taken into account in the valuation was based on statements prepared by the Retirement Plan for CTA Employees.

In preparing the results presented in this report, we have relied upon information provided to us regarding the benefit provisions, Plan participants, unaudited plan assets, and benefit payments. The census data and plan asset information used in determining the results herein were collected as of January 1, 2011. While the scope of our engagement did not call for us to perform an audit or independent verification of this information, we have reviewed this information for reasonableness. The accuracy of the results presented in this report is dependent upon the accuracy and completeness of the underlying information.

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## Actuarial Certification - Public Act 95-708

This actuarial valuation has been performed to satisfy the requirements of 40 ILCS 5/22-101(e), relating to the development of contribution rates for Plan members and the Chicago Transit Authority ("Authority"), for the plan year beginning January 1, 2012 and ending December 31, 2012. This valuation also includes disclosure information as required under GASB Statements No. 25 and 27.

Contribution rates were determined using the projected unit credit cost method and provide for no less than 60 percent funding of total actuarial liabilities for each year on a projected basis through fiscal year end 2039 and 90 percent funding by fiscal year end 2059. Contribution rates reflect the issuance of bond or notes by the Authority, as defined in 70 ILCS 3605/12c. Authority contribution rates are adjusted by a debt service credit, for debt service paid in the prior year, of up to six percent of compensation per year from 2009 to 2040, as defined in 40 ILCS 5/22101(e)(2).

Based on the preceding provisions, the sum of current assets, net bond proceeds, future contributions, and investment earnings, less benefit payments and expenses, is projected to be at least equal to 60 percent of actuarial liabilities through fiscal year end 2039, and 90 percent of actuarial liabilities by fiscal year end 2059, if the following contributions, expressed as a percentage of compensation, are made to the Plan and the Plan experiences no actuarial gains or losses in the future:

| Fiscal Year | Annual Contributions to the Plan (Percentage of Compensation) |  |
| :---: | :---: | :---: |
|  | Authority | Employees |
| 2040 to 2059 | $11.300 \%$ | $8.650 \%$ |

The results documented in this report are estimated based on data that may be imperfect and on assumptions about future events. Certain plan provisions may be approximate or deemed insignificant and therefore are not valued. Assumptions may have been made about participant data or other factors. Reasonable efforts were made in this valuation to ensure that items that were significant in the context of the actuarial liabilities or costs are treated appropriately, and not excluded or included inappropriately. We believe that the use of approximation in our calculations, if any, has not resulted in a significant difference relative to the results we would have obtained using more detailed calculations.

A range of results, different from those presented in this report could be considered reasonable, the numbers are not rounded, but this is for convenience only and should not imply precision, which is not inherent in actuarial calculations.

Future actuarial measurements may differ significantly from the current measurement presented in this report due to such factors as: plan experience differing from that anticipated by the economic and demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements; and changes in plan provisions or applicable law. Due to the limited scope of this report, an analysis of the potential range of such future measurements has not been performed.

The undersigned actuaries are members of the Society of Actuaries and other professional actuarial organizations and meet the "Qualification Standards for Actuaries Issuing Statements of Actuarial Opinion in the United States" relating to pension plans. To the best of our knowledge, the individuals involved in this engagement have no relationship with the Retirement Plan for CTA Employees or Chicago Transit Authority that may impair, or appear to impair, our objectivity of our work.

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In our opinion, the assumptions and methods used for this valuation are individually reasonable and consistent in aggregate and conform with Actuarial Standards of Practice issued by the Actuarial Standards Board, and generally accepted actuarial principles and practices.

In our opinion, the calculations also comply with the requirements of Illinois state law and, where applicable, the Internal Revenue Code, ERISA and the Statements of the Governmental Accounting Standards Board. We certify that the information presented herein is accurate and fairly portrays the actuarial position of the Plan as of January 1, 2011.

Respectfully submitted,

## PricewaterhouseCoopers LLP



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Our Services were performed and this Report was developed in accordance with our engagement letter dated July 9, 2010 and are subject to the terms and conditions included therein. Our Services were performed in accordance with Standards for Consulting Services. Accordingly, we are providing no opinion, attestation or other form of assurance with respect to our work and we did not verify or audit any information provided to us. Our work was limited to the specific procedures and analysis described herein and was based only on the information made available through September 22, 2011. Accordingly, changes in circumstances after this date could affect the findings outlined in this Report. This information has been prepared solely for the use and benefit of, and pursuant to a client relationship exclusively with Retirement Plan for Chicago Transit Authority Employees and its Board of Directors. PwC disclaims any contractual or other responsibility to others based on its use and, accordingly, this information may not be relied upon by anyone other than Retirement Plan for Chicago Transit Authority Employees and its Board of Directors. This document was not intended or written to be used, and it cannot be used, for the purpose of avoiding U.S. federal, state or local tax penalties. This includes penalties that may apply if the transaction that is the subject of this document is found to lack economic substance or fails to satisfy any other similar rule of law. This document has been prepared pursuant to an engagement between PricewaterhouseCoopers LLP and its Client and is intended solely for the use and benefit of that Client and not for reliance by any other person.
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SECTIONI - SUMMARY

## Introduction

This report presents the results of the actuarial valuation as of January 1, 2011 for the Retirement Plan for CTA Employees (the "Plan").

The principal valuation results include:

- The funded status of the Plan as of January 1, 2011;
- The statutory contribution requirements for Plan year 2012, as defined by 40 ILCS 5/22-101(e)(2);
- Annual disclosure as of January 1, 2011 as required by Statement No. 25 of the Governmental Accounting Standards Board.

The valuation was completed based upon membership and financial data submitted by the System.

## Funded Status

The funded status of the Plan decreased from $74.8 \%$ as of January 1, 2010 to $70.1 \%$ as of January 1, 2011. The decrease is primarily due to the amortization of deferred asset losses into the actuarial value of assets and the decrease in the valuation interest rate assumption from 8.75\% to 8.50\% per annum.

## Statutory Minimum Contribution Rates

In accordance with Public Act 95-708, the statutory minimum contribution rates applicable for plan year 2012 are $11.30 \%$ for the Authority and $8.65 \%$ for CTA employees. Based on the actuarial assumptions and methods described in Section IV of this report, this rate is expected to keep the projected funded ratio of the Plan above $60 \%$ in all years through 2039. For years 2040 through 2059, it is expected that contribution rates of $10.83 \%$ for the Authority and $5.415 \%$ for CTA employees will be required to bring the funded ratio to $90 \%$ by plan year end 2059. These contribution rates take into account the repayment of the pension obligation bond through 2040.

## Changes Since Last Year

## Legislative and Administrative Changes

There were no legislative or administrative changes that affected the funding of the Plan. Section V of this report outlines the benefit and contribution provisions of the Plan.

## Actuarial Assumptions and Methods

The valuation interest rate assumption was changed from $8.75 \%$ per annum, compounded annually, to 8.50\% per annum, compounded annually. The assumption was reduced in order to better reflect the expected longterm investment return on plan assets. All other actuarial assumptions and methods are unchanged from the prior year. Section IV of the report outlines the assumptions and methods used by the System.

Effective December 31, 2008, a healthcare trust was established to pay for postretirement healthcare benefits for CTA employees. The health care assets and liabilities are reported separately in accordance with GASB 45, and are not reflected in this report. However, transfer payments to the healthcare trust expected to occur after the valuation date are reflected in the actuarial projections.

## Summary of Principal Results

The table below summarizes the principal financial results based upon the actuarial valuation as of January 1, 2011. Comparable results from the January 1, 2010 valuation are also shown.

1. Investment Return Assumption
2. Membership Data
a. Active Employees
$\quad$ Number ${ }^{1}$
Annualized Salaries (in thousands) ${ }^{2}$
Average Pay ${ }^{2}$
b. Terminated Participants with Vested Benefits Number
Total Monthly Accrued Benefit
Average Monthly Accrued Benefit
c. Retirees and Beneficiaries

Number
Total Monthly Pension
Average Monthly Pension
d. Disabled Recipients

Number
Total Monthly Pension
Average Monthly Pension
3. Statutory Minimum Contribution Rates (as a Percentage of Payroll) ${ }^{3}$
a. Employer Contribution Rate:

Gross Employer Rate
Credit for debt repayment
Net Employer Rate
b. Employee Contribution Rate:
4. Adopted Contribution Rates (as a percentage of Payroll) ${ }^{3}$
a. Net Employer Contribution Rate:
b. Employee Contribution Rate:
5. Actuarial Funded Status (\$ in thousands) ${ }^{4}$
a. Investment Return Assumption
b. Actuarial Accrued Liability
c. Actuarial Value of Assets (AVA)
d. Unfunded Accrued Liability
e. Funded Ratio
f. Market Value of Assets (MVA)
g. Return on MVA (prior year)
h. Return on AVA (prior year)


1. Active statistics for 2011 include all participants who are actively employed which includes 14 participants who are on leave and 53 participants who have opted out of participating in the Plan and are only entitled to a return of their contributions.
2. The salary information for the 53 participants who have opted out of participating in the Plan is not included.
3. Contribution rate applicable for the plan year following the year of valuation.
4. Excludes health care assets.

## Funded Ratio

The Plan's funded status is measured by comparing the actuarial value of assets with the accrued liability. The accrued liability is the present value of benefits accumulated to date under the Plan's funding method and reflects future pay increases for active employees.

Five-Year History of Funded Ratio
(\$ amounts in thousands)

| Valuation as of January 1 | Accrued Liability | Actuarial Value of Assets | Unfunded Accrued Liability | Funded Ratio |
| :---: | :---: | :---: | :---: | :---: |
| 2011 | 2,724,191 | 1,909,967 | 814,224 | 70.1\% |
| 2010 | 2,588,462 | 1,936,729 | 651,733 | 74.8\% |
| 2009 | 2,632,356 | 1,995,953 | 636,403 | 75.8\% |
| 2008 | 2,531,440 | 941,864 | 1,589,576 | 37.2\% |
| 2007 | 2,466,106 | 1,007,305 | 1,458,801 | 40.8\% |

The following chart shows a five-year history of the accrued liability and the valuation assets:


## Funded Ratio

The following chart shows a 10-year history of the funded ratio:


Projection of Funded Status
A. Statutory Minimum Contribution Rates Using $8.50 \%$ Investment Return Assumption

| Year | Actuarial Accrued Liability | Actuarial Value of Assets | Funded Ratio | Normal Cost | Benefit Payments | Payroll | Active Members | Employee Contribution Percent | Employer Contribution Percent | Total Percent | Employee Contributions | Employer Contributions | Total Contributions | Debt Service (paid in prior year) | Percen of Pay |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| (a) | (b) | (c) | $\begin{gathered} (\mathrm{d}) \\ =(\mathrm{c}) /(\mathrm{b}) \end{gathered}$ | (e) | (f) | (g) | (h) | (i) | (j) | $\begin{gathered} (\mathrm{k}) \\ =(\mathrm{i})+(\mathrm{j}) \end{gathered}$ | $\begin{gathered} (1) \\ =(g)^{*}(i) \end{gathered}$ | $\begin{gathered} (m) \\ =(g)^{*}(j) \end{gathered}$ | $\begin{aligned} & (n) \\ & (n)+(m) \end{aligned}$ | (0) | $\begin{gathered} \overline{(p)} \\ =(0) /(\mathrm{g}) \end{gathered}$ |
| 2011 | 2,724,190,616 | 1,909,967,120 | 70.11\% | 50,362,189 | 222,705,308 | 528,287,879 | 8,879 | 8.345\% | 10.690\% | 19.035\% | 44,085,624 | 56,473,974 | 100,559,598 | 87,981,000 | 16.7\% |
| 2012 | 2,775,275,980 | 1,873,201,902 | 67.50\% | 52,587,183 | 227,253,183 | 526,454,895 | 8,879 | 8.650\% | 11.300\% | 19.950\% | 45,538,348 | 59,489,403 | 105,027,752 | 87,981,000 | 16.7\% |
| 2013 | 2,828,259,255 | 1,834,226,078 | 64.85\% | 54,937,640 | 231,464,408 | 523,521,549 | 8,879 | 8.650\% | 11.300\% | 19.950\% | 45,284,614 | 59,157,935 | 104,442,549 | 94,691,000 | 18.1\% |
| 2014 | 2,883,781,051 | 1,861,784,023 | 64.56\% | 57,436,300 | 235,208,769 | 520,833,663 | 8,879 | 8.650\% | 11.300\% | 19.950\% | 45,052,112 | 58,854,204 | 103,906,316 | 104,862,000 | 20.1\% |
| 2015 | 2,942,701,755 | 1,894,051,605 | 64.36\% | 59,766,039 | 239,510,706 | 540,470,493 | 8,879 | 8.650\% | 11.300\% | 19.950\% | 46,750,698 | 61,073,166 | 107,823,863 | 104,866,000 | 19.4\% |
| 2016 | 3,004,566,147 | 1,917,762,458 | 63.83\% | 61,909,458 | 244,215,560 | 562,291,483 | 8,879 | 8.650\% | 11.300\% | 19.950\% | 48,638,213 | 63,538,938 | 112,177,151 | 104,865,000 | 18.6\% |
| 2017 | 3,069,002,513 | 1,943,122,226 | 63.31\% | 63,848,300 | 249,324,629 | 585,525,753 | 8,879 | 8.650\% | 11.300\% | 19.950\% | 50,647,978 | 66,164,410 | 116,812,388 | 104,862,000 | 17.9\% |
| 2018 | 3,135,602,003 | 1,970,143,604 | 62.83\% | 65,605,524 | 255,086,230 | 608,953,793 | 8,879 | 8.650\% | 11.300\% | 19.950\% | 52,674,503 | 68,811,779 | 121,486,282 | 104,863,000 | 17.2\% |
| 2019 | 3,203,675,304 | 1,998,327,864 | 62.38\% | 67,346,787 | 261,114,104 | 635,108,477 | 8,879 | 8.650\% | 11.300\% | 19.950\% | 54,936,883 | 71,767,258 | 126,704,141 | 104,863,000 | 16.5\% |
| 2020 | 3,273,051,210 | 2,028,063,346 | 61.96\% | 69,065,712 | 267,920,420 | 661,560,012 | 8,879 | 8.650\% | 11.300\% | 19.950\% | 57,224,941 | 74,756,281 | 131,981,222 | 104,861,000 | 15.9\% |
| 2021 | 3,343,016,415 | 2,058,732,117 | 61.58\% | 70,777,204 | 275,792,048 | 689,016,029 | 8,879 | 8.650\% | 11.300\% | 19.950\% | 59,599,887 | 77,858,811 | 137,458,698 | 104,863,000 | 15.2\% |
| 2022 | 3,412,495,470 | 2,089,511,829 | 61.23\% | 72,399,968 | 283,709,842 | 717,893,635 | 8,879 | 8.650\% | 11.300\% | 19.950\% | 62,097,799 | 81,121,981 | 143,219,780 | 104,862,000 | 14.6\% |
| 2023 | 3,481,291,474 | 2,120,659,44 | 60.92\% | 74,125,120 | 291,280,257 | 749,006,417 | 8,879 | 8.650\% | 11.300\% | 19.950\% | 64,789,055 | 84,637,725 | 149,426,780 | 104,863,000 | 14.0\% |
| 2024 | 3,549,807,024 | 2,153,033,248 | 60.65\% | 75,960,331 | 298,878,037 | 780,857,947 | 8,879 | 8.650\% | 11.300\% | 19.950\% | 67,544,212 | 88,236,948 | 155,781,160 | 104,866,000 | 13.4\% |
| 2025 | 3,618,118,486 | 2,186,862,58 | 60.44\% | 78,141,848 | 306,867,74 | 814,330,480 | 8,879 | 8.650\% | 11.300\% | 19.950\% | 70,439,587 | 92,019,344 | 162,458,931 | 104,864,000 | 12.9\% |
| 2026 | 3,686,154,453 | 2,222,199,70 | 60.29\% | 80,532,085 | 314,948,719 | 848,939,395 | 8,879 | 8.650\% | 11.300\% | 19.950\% | 73,433,258 | 95,930,152 | 169,363,409 | 104,861,000 | 12.4\% |
| 2027 | 3,754,015,239 | 2,259,313,99 | 60.18\% | 82,687,883 | 323,532, | 884,351,040 | 8,879 | 8.650\% | 11.300\% | 19.950\% | 76,496,365 | 99,931,668 | 176,428,032 | 104,864,000 | 11.9\% |
| 2028 | 3,820,921,96 | 2,297,998,99 | 60.14\% | 84,653,902 | 332,217,396 | 922,212,785 | 8,879 | 8.650\% | 11.300\% | 19.950\% | 79,771,406 | 104,210,045 | 183,981,451 | 104,864,000 | 11.4\% |
| 2029 | 3,886,471,54 | 2,338,792,93 | 60.18\% | 87,031,060 | 339,767,58 | 963,368,759 | 8,879 | 8.650\% | 11.300\% | 19.950\% | 83,331,398 | 108,860,670 | 192,192,067 | 104,861,000 | 10.9\% |
| 2030 | 3,952,153,757 | 2,383,742,85 | 60.32\% | 90,098,748 | 346,223,77 | 1,006,758,250 | 8,879 | 8.650\% | 11.300\% | 19.950\% | 87,084,589 | 113,763,682 | 200,848,271 | 104,862,000 | 10.4\% |
| 2031 | 4,019,854,719 | 2,434,807,03 | 60.57\% | 93,654,798 | 351,482,7 | 1,053,390,88 | 8,879 | 8.650\% | 11.300\% | 19.950\% | 91,118,311 | 119,033,169 | 210,151,481 | 104,863,000 | 10.0\% |
| 2032 | 4,091,494,183 | 2,494,427,75 | 60.97\% | 97,696,772 | 355,146,52 | 1,103,118,650 | 8,879 | 8.650\% | 11.300\% | 19.950\% | 95,419,763 | 124,652,407 | 220,072,171 | 104,865,000 | 9.5\% |
| 2033 | 4,169,585,009 | 2,565,639,10 | 61.53\% | 102,041,447 | 358,006,558 | 1,154,096,463 | 8,879 | 8.650\% | 11.300\% | 19.950\% | 99,829,344 | 130,412,900 | 230,242,244 | 104,862,000 | 9.1\% |
| 2034 | 4,255,851,777 | 2,650,524,127 | 62.28\% | 106,950,140 | 360,141,815 | 1,208,989,563 | 8,879 | 8.650\% | 11.300\% | 19.950\% | 104,577,597 | 136,615,821 | 241,193,418 | 104,864,000 | 8.7\% |
| 2035 | 4,352,314,996 | 2,751,814,973 | 63.23\% | 112,732,699 | 360,601,991 | 1,267,612,029 | 8,879 | 8.650\% | 11.300\% | 19.950\% | 109,648,441 | 143,240,159 | 252,888,600 | 104,861,000 | 8.3\% |
| 2036 | 4,462,499,356 | 2,873,428,036 | 64.39\% | 119,336,659 | 359,644,482 | 1,329,338,411 | 8,879 | 8.650\% | 11.300\% | 19.950\% | 114,987,773 | 150,215,240 | 265,203,013 | 104,861,000 | 7.9\% |
| 2037 | 4,589,918,492 | 3,019,214,187 | 65.78\% | 126,833,887 | 357,763,308 | 1,393,810,548 | 8,879 | 8.650\% | 11.300\% | 19.950\% | 120,564,612 | 157,500,592 | 278,065,204 | 104,863,000 | 7.5\% |
| 2038 | 4,737,937,529 | 3,192,762,120 | 67.39\% | 135,287,069 | 354,667,740 | 1,461,111,648 | 8,879 | 8.650\% | 11.300\% | 19.950\% | 126,386,158 | 165,105,616 | 291,491,774 | 104,866,000 | 7.2\% |
| 2039 | 4,910,575,223 | 3,398,285,956 | 69.20\% | 143,984,165 | 352,141,575 | 1,528,043,758 | 8,879 | 8.650\% | 11.300\% | 19.950\% | 132,175,785 | 172,668,945 | 304,844,730 | 104,861,000 | 6.9\% |

A. Statutory Minimum Contribution Rates Using 8.50\% Investment Return Assumption

| Year | Actuarial Accrued Liability | Actuarial Value of Assets | Funded Ratio | Normal Cost | Benefit Payments | Payroll | Active Members | Employee Contribution Percent | Employer Contribution Percent | Total Percent | Employee Contributions | Employer Contributions | Total Contributions | Debt Service (paid in prior year) | Percent of Pay |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| (a) | (b) | (c) | $\begin{aligned} & (\mathrm{d}) \\ & =(\mathrm{c})(\mathrm{b}) \end{aligned}$ | (e) | ${ }^{(f)}$ | (g) | (h) | (i) | (1) | $\begin{gathered} (k) \\ =(i)+(i) \end{gathered}$ | $\begin{gathered} \left.(1)()^{2}\right) \\ =(9)+(1) \end{gathered}$ | $\begin{aligned} & (m) \\ & =(g))^{*}(i) \end{aligned}$ | $\begin{gathered} (n) \\ =(1)+(m) \end{gathered}$ | (0) | $\begin{gathered} (\mathrm{p}) \\ =(0) /(\mathrm{g}) \end{gathered}$ |
| 2040 | 5,109,622,369 | 3,637,833,301 | 71.20\% | 152,786,702 | 351,894,355 | 1,596,643,774 | 8,879 | 5.415\% | 4.830\% | 10.245\% | 86,458,260 | 77,117,894 | 163,576,155 | 104,863,000 | 6.6\% |
| 2041 | 5,335,043,748 | 3,750,727,407 | 70.30\% | 159,088,623 | 353,215,390 | 1,666,277,360 | 8,879 | 5.415\% | 4.830\% | 10.245\% | 90,228,919 | 80,481,196 | 170,710,116 | 104,863,000 | 6.3\% |
| 2042 | 5,584,834,214 | 3,879,277,488 | 69.46\% | 167,071,924 | 361,463,865 | 1,731,987,451 | 8,879 | 5.415\% | 10.830\% | 16.245\% | 93,787,120 | 187,574,241 | 281,361,361 |  | 0.0\% |
| 2043 | 5,855,626,455 | 4,125,509,215 | 70.45\% | 174,838,321 | 375,025,606 | 1,800,665,206 | 8,879 | 5.415\% | 10.830\% | 16.245\% | 97,506,021 | 195,012,042 | 292,518,063 |  | 0.0\% |
| 2044 | 6,143,351,323 | 4,390,163,384 | 71.46\% | 182,232,430 | 391,393,998 | 1,870,758,027 | 8,879 | 5.415\% | 10.830\% | 16.245\% | 101,301,547 | 202,603,094 | 303,904,641 |  | 0.0\% |
| 2045 | 6,446,132,263 | 4,672,119,618 | 72.48\% | 189,170,478 | 410,158,226 | 1,943,191,087 | 8,879 | 5.415\% | 10.830\% | 16.245\% | 105,223,797 | 210,447,595 | 315,671,392 |  | 0.0\% |
| 2046 | 6,762,263,087 | 4,970,747,261 | 73.51\% | 196,102,095 | 431,705,229 | 2,017,941,611 | 8,879 | 5.415\% | 10.830\% | 16.245\% | 109,271,538 | 218,543,076 | 327,814,615 |  | 0.0\% |
| 2047 | 7,089,970,566 | 5,284,954,813 | 74.54\% | 203,074,130 | 457,112,602 | 2,092,785,733 | 8,879 | 5.415\% | 10.830\% | 16.245\% | 113,324,347 | 226,648,695 | 339,973,042 |  | 0.0\% |
| 2048 | 7,426,228,515 | 5,612,057,981 | 75.57\% | 210,213,834 | 484,113,255 | 2,172,514,674 | 8,879 | 5.415\% | 10.830\% | 16.245\% | 117,641,670 | 235,283,339 | 352,925,009 | - | 0.0\% |
| 2049 | 7,770,278,045 | 5,952,319,163 | 76.60\% | 217,322,663 | 513,447,953 | 2,254,600,731 | 8,879 | 5.415\% | 10.830\% | 16.245\% | 122,086,630 | 244,173,259 | 366,259,889 |  | 0.0\% |
| 2050 | 8,120,308,971 | 6,304,822,734 | 77.64\% | 224,535,774 | 544,078,875 | 2,340,516,424 | 8,879 | 5.415\% | 10.830\% | 16.245\% | 126,738,964 | 253,477,929 | 380,216,893 |  | 0.0\% |
| 2051 | 8,475,570,968 | 6,669,906,551 | 78.70\% | 231,862,754 | 576,177,246 | 2,429,757,908 | 8,879 | 5.415\% | 10.830\% | 16.245\% | 131,571,391 | 263,142,781 | 394,714,172 |  | 0.0\% |
| 2052 | 8,835,096,265 | 7,047,673,353 | 79.77\% | 239,321,447 | 609,584,873 | 2,522,770,424 | 8,879 | 5.415\% | 10.830\% | 16.245\% | 136,608,018 | 273,216,037 | 409,824,055 |  | 0.0\% |
| 2053 | 9,198,010,694 | 7,438,474,936 | 80.87\% | 246,981,100 | 643,871,419 | 2,619,768,566 | 8,879 | 5.415\% | 10.830\% | 16.245\% | 141,860,468 | 283,720,936 | 425,581,404 |  | 0.0\% |
| 2054 | 9,563,884,587 | 7,843,177,964 | 82.01\% | 254,915,580 | 678,740,235 | 2,721,048,708 | 8,879 | 5.415\% | 10.830\% | 16.245\% | 147,344,788 | 294,689,575 | 442,034,363 |  | 0.0\% |
| 2055 | 9,932,641,413 | 8,263,082,219 | 83.19\% | 263,116,350 | 714,347,841 | 2,826,487,219 | 8,879 | 5.415\% | 10.830\% | 16.245\% | 153,054,283 | 306,108,566 | 459,162,849 |  | 0.0\% |
| 2056 | 10,304,038,163 | 8,699,413,853 | 84.43\% | 271,625,783 | 750,870,390 | 2,936,164,847 | 8,879 | 5.415\% | 10.830\% | 16.245\% | 158,993,326 | 317,986,653 | 476,979,979 |  | 0.0\% |
| 2057 | 10,677,654,200 | 9,153,333,278 | 85.72\% | 280,523,350 | 787,836,858 | 3,050,770,486 | 8,879 | 5.415\% | 10.830\% | 16.245\% | 165,199,222 | 330,398,444 | 495,597,665 | - | 0.0\% |
| 2058 | 11,053,613,352 | 9,626,707,248 | 87.09\% | 289,807,219 | 825,132,820 | 3,170,418,214 | 8,879 | 5.415\% | 10.830\% | 16.245\% | 171,678,146 | 343,356,293 | 515,034,439 | - | 0.0\% |
| 2059 | 11,432,171,990 | 10,121,699,802 | 88.54\% | 299,626,046 | 862,071,774 | 3,296,198,705 | 8,879 | 5.415\% | 10.830\% | 16.245\% | 178,489,160 | 356,978,320 | 535,467,480 | - | 0.0\% |
| 2060 | 11,814,467,867 | 10,641,559,308 | 90.07\% | 310,157,428 | 897,951,495 | 3,428,396,783 | 8,879 | 5.415\% | 10.830\% | 16.245\% | 185,647,686 | 371,295,372 | 556,943,057 |  | 0.0\% |

## Projection Assumptions

1. Results shown as of the beginning of the fiscal year for pension benefits only.
2. Benefit payments are for pension only.
3. Employer contributions are net of debt service credit of 6.0 percent of compensation for fiscal years 2011 through 2040. Contribution rate requirements, in excess of the statutory
minimum of 6.0 percent for employees and 12.0 percent for the employer (before the debt service credit), are allocated one-third to employees and two-thirds to the employer
A. Actuarial Valuation Summary as of January 1, 2011

4. Active statistics for 2011 include all participants who are actively employed which includes 14 participants who are on leave and 53 participants who have opted out of participating in the Plan and are only entitled to a return of their contributions.
5. For 2011, the salary information for the 53 participants who have opted out of participating in the Plan is not included.
A. Actuarial Valuation Summary as of January 1, 2011 (Continued)

| Valuation results (\$ in Thousands) | 1/1/2010 |  | 1/1/2011 |  |
| :---: | :---: | :---: | :---: | :---: |
| 1. Return on Assets Assumption |  | 8.75 \% |  | 8.50 \% |
| 2. Annual Normal Cost |  |  |  |  |
| a. Age/Service Pensions | \$ | 44,419 | \$ | 45,682 |
| b. Disability Allowance |  | 1,746 |  | 1,891 |
| c. Pre-Retirement Death Benefits |  | 722 |  | 736 |
| d. Total | \$ | 46,887 | \$ | 48,309 |
| 3. Actuarial Accrued Liability a. Active Employees |  |  |  |  |
|  |  |  |  |  |
| Age/Service Pensions | \$ | 761,369 | \$ | 803,886 |
| Optout Return of Contributions |  | N/A |  | 171 |
| Disability Allowance |  | 18,869 |  | 22,720 |
| Pre-Retirement Death Benefits |  | 10,121 |  | 10,814 |
| Total - Active Employees | \$ | 790,359 | \$ | 837,591 |
| b. Inactive Employees |  |  |  |  |
| Terminated Vested Employees | \$ | 3,074 |  | 4,932 |
| Retired Employees and Survivors |  | 1,681,849 |  | 1,762,572 |
| Disabled Retirees |  | 113,180 |  | 119,096 |
| Total - Inactive Employees | \$ | 1,798,103 |  | 1,886,600 |
| c. Total Actuarial Accrued Liability |  | 2,588,462 |  | 2,724,191 |
| 4. Actuarial Funded Status |  |  |  |  |
| a. Total Actuarial Accrued Liability | \$ | 2,588,462 | \$ | 2,724,191 |
| b. Actuarial Value of Assets ${ }^{2}$ |  | 1,936,729 |  | 1,909,967 |
| c. Unfunded Actuarial Accrued Liability | \$ | 651,733 | \$ | 814,224 |
| d. Funded Ratio |  | 74.8 \% |  | 70.1 \% |
| 5. Statutory Minimum Contribution Rates (as a Percentage of Payroll) ${ }^{1}$ <br> a. Employer Contribution Rate: |  |  |  |  |
|  |  |  |  |  |
| Gross Employer Rate |  | 16.340 \% |  | 17.300 \% |
| Credit for debt repayment |  | (6.000) \% |  | (6.000) \% |
| Net Employer Rate |  | 10.340 \% |  | 11.300 \% |
| b. Employee Contribution Rate: |  | 8.170 \% |  | 8.650 \% |

1. Contribution rate applicable for the plan year following the year of valuation.
2. Excludes health care assets.
B. Reconciliation of Market Value of Plan Assets

|  | Plan Year Ending |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  | 12/31/2009 |  | 12/31/2010 |  |
| 1. Market Value of Assets, Beginning of Year | \$ | 1,743,457,257 | \$ | 1,716,317,106 |
| 2. Contributions for Plan Year |  |  |  |  |
| a. Member contributions | \$ | 34,973,953 | \$ | 45,265,159 |
| b. CTA contributions |  | 41,448,419 |  | 56,215,939 |
| c. Pension Obligation Bond Proceeds |  | - |  | - |
| d. Total Contributions | \$ | 76,422,372 | \$ | 101,481,098 |
| 3. Disbursements for Plan Year |  | $(214,659,109)$ |  | $(218,345,993)$ |
| 4. Investment Return for Plan Year |  |  |  |  |
| a. Gross Investment Return | \$ | 118,063,277 | \$ | 206,304,225 |
| b. Administrative Expenses |  | $(2,153,976)$ |  | $(2,028,205)$ |
| c. Investment Expenses |  | $(4,812,715)$ |  | $(8,986,466)$ |
| d. Net Investment Return | \$ | 111,096,586 |  | 195,289,554 |
| 5. Market Value of Assets, End of Year | \$ | 1,716,317,106 |  | 1,794,741,765 |
| 6. Estimated Rate of Return for Plan Year ${ }^{1}$ |  |  |  |  |
| a. Gross Rate of Return |  | 7.10 \% |  | 12.50 \% |
| b. Net Rate of Return ${ }^{2}$ |  | 6.60 \% |  | 11.80 \% |

1. Method used for calculating rate of return does not reflect specific timing of cash inflows and outflows. All cash flows are assumed to be distributed evenly throughout the year.
2. Net of Investment and Administrative Expenses
C. Development of Actuarial Value of Assets as of January 1, 2011
(\$ in thousands)

| 1. Market Value of Plan Assets as of January 1, 2011 |  |  |  |  | \$1,794,742 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 2. Development of Deferred Gain (Loss) |  |  |  |  |  |
| Investment Income |  |  |  |  |  |
| Year | Actual | Expected | Difference | \% Deferred | Deferred Amount |
| 2010 | \$195,290 | \$145,065 | \$50,225 | 80\% | \$40,180 |
| 2009 | \$111,097 | \$146,505 | $(\$ 35,408)$ | 60\% | $(\$ 21,245)$ |
| 2008 | $(\$ 224,883)$ | \$121,195 | (\$346,078) | 40\% | $(\$ 138,431)$ |
| 2007 | \$112,704 | \$91,350 | \$21,354 | 20\% | \$4,271 |
| 2006 | \$132,800 | \$97,705 | \$35,095 | 0\% | \$0 |
|  |  |  |  |  | (\$115,225) |
| 3. Actuarial Value of Plan Assets as of January 1, 2011 |  |  |  |  | \$1,909,967 |
| 4. Ratio of Actuarial Value to Market Value of Assets |  |  |  |  | 106.42\% |
| 5. Rate of Return on Actuarial Value of Assets for 2010 |  |  |  |  | 4.80\% |

The Actuarial Value of Assets recognizes expected investment return fully each year. Differences between actual and expected investment income are recognized over a five-year period at a rate of 20 percent per year. During periods when investment performance exceeds the assumed rate, Actuarial Value of Assets will tend to be less than Market Value. During periods when investment performance is less than the assumed rate, Actuarial Value of Assets will tend to be greater than Market Value. The Actuarial Value of Assets is unbiased with respect to Market Value. At any time it may be either greater or less than Market Value. If assumed rates are exactly realized for four consecutive years, it will become equal to Market Value.

## D. Analysis of Actuarial Net Gain / (Loss) as of January 1, 2011 <br> (\$ in thousands)

| 1. Unfunded Accrued Liability as of January 1, 2010 | \$ | 651,733 |
| :---: | :---: | :---: |
| 2. Expected Increase (Decrease) in Unfunded Accrued Liability during 2010 |  |  |
| a. Interest on Unfunded Liability @ 8.75\% | \$ | 57,027 |
| b. Contributions in excess of Normal Cost and Interest on Unfunded Liability |  | $(43,108)$ |
| c. Pre-2010 Asset Losses (Gains) recognized during 2010 |  | 65,007 |
| d. Net Expected Increase (Decrease) in Unfunded Accrued Liability | \$ | 78,926 |
| 3. Expected Unfunded Accrued Liability as of January 1, 2011 | \$ | 730,659 |
| 4. Sources of Actuarial Loss (Gain) as of January 1, 2011 |  |  |
| a. Loss (Gain) on Actuarial Assets | \$ | $(10,045)$ |
| b. Loss (Gain) from payroll growth different from expected |  | 10,114 |
| c. Loss (Gain) from Retirement and Other Separation Experience |  | $(1,177)$ |
| d. Loss (Gain) from Retirees' Mortality Experience |  | 2,674 |
| e. Loss (Gain) from New Entrants |  | 1,863 |
| f. Other Demographic Loss (Gain), including data |  | 17,883 |
| g. Total Net Loss (Gain) as of January 1, 2011 | \$ | 21,312 |
| 5. Actual Unfunded Accrued Liability as of January 1, 2011 |  |  |
| (before assumption changes) | \$ | 751,971 |
| 6. Changes in Actuarial Assumptions as of January 1, $2011{ }^{1}$ | \$ | 62,253 |
| 7. Actual Unfunded Accrued Liability as of January 1, 2011 (after assumption changes) | \$ | 814,224 |

1. The interest rate assumption was reduced from $8.75 \%$ to $8.50 \%$ as of January 1, 2011.

## A. Overview - GASB Statement No. 25 Disclosure

Statement Number 25 of the Governmental Accounting Standards Board established reporting standards for the annual financial reports of defined benefit pension plans. The statement requires disclosure of the "schedule of funding progress" and the "schedule of employer contributions" in the System's financial statements.

The "schedule of funding progress" shows historical trend information about the Plan's actuarial value of assets, the actuarial accrued liability and the unfunded actuarial accrued liability. The actuarial funded status is measured by comparing the actuarial value of assets (based on a five-year smoothed market value) with the accrued liability. The accrued liability is the present value of benefits accumulated to date under the System's funding method and reflects future pay increases for active employees. On this basis, the Plan's funded ratio is $70.1 \%$ as of January 1, 2011. The funded ratio is based on an actuarial value of assets of $\$ 1,909,967,120$ and an accrued liability of $\$ 2,724,190,616$. Exhibit A in Section III shows the schedule of funding progress.

The "schedule of employer contributions" shows historical trend information about the annual required contributions (ARC) of the employer and the percentage of the ARC contributed to the Plan. The ARC is equal to the normal cost plus amortization of the unfunded actuarial accrued liability over 30 years. The employer contributions to the Plan for the plan year ended December 31, 2010, which were based on the January 1, 2010 valuation, were equal to $93.5 \%$ of the ARC. Exhibit C in Section III shows the schedule of employer contributions.

## SECTION III - GASB NO. 25

B. Schedule of Funding Progress - GASB Statement No. 25 Disclosure
(\$ in thousands)

| Actuarial <br> Valuation <br> Date | Actuarial Value of <br> Assets | Actuarial Accrued <br> Liability | Unfunded Actuarial <br> Accrued Liability | Funded Ratio | Covered Payroll | Unfunded Accrued <br> Liability as a <br> Percentage of <br> Covered Payroll |
| :---: | ---: | ---: | ---: | ---: | ---: | ---: |
| $1 / 1 / 2011$ | 1 | $1,909,967$ | $2,724,191$ | 814,224 | $70.1 \%$ | 528,288 |
| $1 / 1 / 2010$ | $1,936,849$ | $2,588,462$ | 651,613 | $74.8 \%$ | 567,173 | $154.1 \%$ |
| $1 / 1 / 2009$ | $1,995,953$ | $2,632,356$ | 636,403 | $75.8 \%$ | 594,139 | $107.1 \%$ |
| $1 / 1 / 2008$ | 2 | 941,864 | $2,531,440$ | $1,589,576$ | $37.2 \%$ | 571,314 |
| $1 / 1 / 2007$ | 3 | $1,007,305$ | $2,466,106$ | $1,458,801$ | $40.8 \%$ | 562,567 |
| $1 / 1 / 2006$ | 810,336 | $2,354,125$ | $1,543,789$ | $34.4 \%$ | 547,532 | $259.3 \%$ |
| $1 / 1 / 2005$ | 902,117 | $2,291,162$ | $1,389,045$ | $39.4 \%$ | 544,442 | $282.0 \%$ |
| $1 / 1 / 2004$ | $1,062,399$ | $2,189,666$ | $1,127,267$ | $48.5 \%$ | 486,626 | $231.6 \%$ |
| $1 / 1 / 2003$ | $1,190,087$ | $2,085,723$ | 895,636 | $57.1 \%$ | 480,740 | $186.3 \%$ |
| $1 / 1 / 2002$ |  | $1,355,567$ | $2,044,330$ | 688,763 | $66.3 \%$ | 459,343 |

1. Effective January 1, 2011, the rate of return for disclosure purposes was changed to 8.50 percent.
2. Effective January 1, 2008, the rate of return for disclosure purposes was changed to 8.75 percent. Prior year's information is based on a rate of 9.00 percent as defined in the terms of the bargaining agreement.
3. Effective January 1, 2007, retiree healthcare assets have been marked to the market value of the retiree healthcare account, and are disclosed under GASB No. 43. Previously, retiree healthcare assets disclosed under GASB No. 25 were allocated in proportion to actuarial accrued liabilities.
Note that the increase in funded ratio is predominantly due to this change and without this change the funded ratio would have declined.
C. Schedule of Employer Contributions - GASB Statement No. 25 Disclosure (\$ in thousands)

| Year Ended |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 31-Dec | Authority <br> Contribution <br> (a) | Employee <br> Contibution <br> (b) | Total <br> Contribution <br> (a+b) | Annual <br> Required <br> Contribution <br> (c) | Percentage <br> Contributed <br> ([a+b]/c) |
| 2010 | 56,216 | 45,265 | 101,481 | 108,478 | $93.5 \%$ |
| 2009 | 41,448 | 34,974 | 76,422 | 118,717 | $64.4 \%$ |
| 2008 | $1,165,947$ | 27,798 | $1,193,745$ | 206,670 | $577.6 \%$ |
| 2007 | 25,038 | 12,549 | 37,587 | 198,457 | $18.9 \%$ |
| 2006 | 23,931 | 11,971 | 35,902 | 194,926 | $18.4 \%$ |
| 2005 | 19,850 | 9,784 | 29,634 | 180,227 | $16.4 \%$ |
| 2004 | 20,210 | 10,123 | 30,333 | 153,253 | $19.8 \%$ |
| 2003 | 19,570 | 9,813 | 29,383 | 117,305 | $25.0 \%$ |
| 2002 | 19,766 | 9,883 | 29,649 | 97,044 | $30.6 \%$ |
| 2001 | 24,081 | 12,067 | 36,148 | 73,387 | $49.3 \%$ |

The information presented above was determined as part of the actuarial valuation as of one year prior to the dates indicated (i.e., the contribution rates determined by the valuation completed as of January 1, 2009 were contributed in the fiscal year ending December 31, 2010).

## Additional information as of the latest actuarial valuation follows:

Valuation Date:
Actuarial Cost Method:
Asset Valuation Method:

Actuarial Assumptions:
(i) Investment Rate of Return
(ii) Salary Increases (including merit increases and wage inflation)
8.50\%
$2.75 \%$ for 2011, $1.50 \%$ for 2012-14, and servicegraded table with $5 \%$ ultimate rate after 5 years of service thereafter

January 1, 2011
Projected Unit Credit
5-year smoothed market
D. Annual Required Contribution (ARC)
(\$ in thousands)

|  | Plan Year Ending |  |  |
| :--- | ---: | ---: | :---: |
|  | $12 / 31 / 2010$ | $12 / 31 / 2011$ |  |
| Investment Rate of Return Assumption | $8.75 \%$ | $8.50 \%$ |  |
| Normal Cost | $\$$ | 46,887 |  |
| Amortization of Unfunded Actuarial Liability $^{1}$ | $\$$ | 48,309 |  |
| Interest Adjustment ${ }^{2}$ | 57,044 | 69,829 |  |
| Total ARC | 4,547 | 5,021 |  |
|  | $\$$ | 108,478 |  |

${ }^{1} 30$ Year Level Dollar Amortization of Unfunded Actuarial Accrued Liability
${ }^{2}$ Interest on Normal Cost and Amortization of Unfunded Actuarial Liability to the middle of the year

## E. Solvency Test - GASB Statement No. 25 Disclosure

Solvency Test - Comparative Summary of Accrued Liability and Actuarial Value of Assets

|  | Accrued Liability for: |  |  |  | Portion of Accrued Liability Covered by Actuarial Value of Assets |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Valuation as of January 1 | (1) <br> Active Member Contributions | (2) <br> Retirees, Beneficiaries, TVRs, and Disableds | (3) <br> Active Member (Employer Financed Portion) | Actuarial Value of Assets ${ }^{1}$ | (1) | (2) | (3) |
| 2011 | 242,723,521 | 1,886,770,851 | 594,696,243 | 1,909,967,120 | 100 \% | 88.36 \% | 0.00 \% |

1. Excludes health care assets.
2. Rate of Covered Pay: The rate of covered pay for participants has been estimated at $\$ 528,287,879$ for 2011. The following adjustments were made to the actual covered earnings for 2010 supplied by the Authority:
(a) No earnings or a fractional year of earnings were submitted for employees with a work status date in 2010 who were hired during 2009. We have annualized the 2010 earnings and assumed minimum earnings of $\$ 25,000$ per year for this group.
(b) For employees on layoff, extended leave of absence, or inactive status, we have assumed minimum earnings of $\$ 25,000$ per year.
(c) For employees whose 2010 earnings were less than $\$ 20,000$, we have assumed an annual rate of $\$ 25,000$ per year.
(d) For all employees, 2011 salary was assumed to increase $2.75 \%$ from 2010.
3. Retiree Benefits: The benefit amounts received for retirees were compared to information received from the Authority for the prior valuation.
4. Actuarial Cost Method: The normal cost and actuarial liability were determined using the Projected Unit Credit cost method. The normal cost for each individual active member equals the portion of the actuarial present value of projected benefits allocated to service earned during the current year. The actuarial accrued liability for each individual active member equals the portion of the actuarial present value of projected benefits allocated to service earned during prior plan years. The actuarial accrued liability for retired and inactive members equals the present value of benefits.
5. Asset Valuation Method: Under the Plan's asset valuation method, assumed investment return is recognized fully each year. The differences between actual and assumed investment return are phased in over a five-year period with 20 percent of the difference between expected and actual return recognized each year. In any year the actuarial value of assets may be higher or lower than the market value of assets, but if the assumed return is earned for four years, the two will be equal.
6. Amortization Method: Unfunded liabilities are funded as a level dollar. For GASB purposes, a 30 -year period is used for the pension liability.
7. Earnings on Plan Assets: $8.50 \%$ per annum, compounded annually.
8. Salary Inflation:

| 2011: | $2.75 \%$ |
| :--- | :--- |
| 2012-2014: | $1.50 \%$ |
| 2015 and after: | $4.00 \%$ |

8. Compensation Increases: According to the following table, compounded annually, assumed end of year (includes inflation):

| Years of | Year-over-year Compensation Increases |  |  |
| :---: | :---: | :---: | :---: |
| Service | 2011 | 2012-14 | 2015 and after |
| 1 | 2.75\% | 1.50\% | 15.00\% |
| 2 | 2.75\% | 1.50\% | 13.00\% |
| 3 | 2.75\% | 1.50\% | 11.00\% |
| 4 | 2.75\% | 1.50\% | 9.00\% |
| >=5 | 2.75\% | 1.50\% | 5.00\% |

## SECTION IV - ACTUARIAL ASSUMPTIONS AND METHODS

9. Mortality:
(a) Active Members - The 1994 Group Annuity Mortality Table for males and females multiplied by 90 percent.
(b) Retirees \& Survivors -The 1994 Group Annuity Mortality Table for males and females.
(c) Disabled Employees - The 1994 Group Annuity Mortality Table for males and females multiplied by 110 percent.
10. Withdrawals from Service: According to the following table shown for illustrative ages:

| Age | Rates of Termination for Reasons Other <br> than Death or Disability |
| :---: | :---: | :---: |
| 25 | $7.50 \%$ |
| 30 | $5.60 \%$ |
| 35 | $4.60 \%$ |
| 40 | $3.40 \%$ |
| 45 | $2.90 \%$ |
| 50 | $2.40 \%$ |
| 55 \& Older | $0.50 \%$ |

If service is 25 or greater, no withdrawal is assumed.

In addition, active headcount was assumed to remain flat for all years in the future.

## SECTION IV - ACTUARIAL ASSUMPTIONS AND METHODS

11. Recovery from disability without returning to work: Disabled members are assumed to recover according to the following table as shown for illustrative ages:

| Sample <br> Attained <br> Ages | Disabled Recovery ${ }^{1}$ |  |
| :---: | :---: | :---: |
|  | Men | Women $^{2}$ |
| 30 | $0.412 \%$ | $0.461 \%$ |
| 35 | $0.406 \%$ | $0.447 \%$ |
| 40 | $0.382 \%$ | $0.422 \%$ |
| 45 | $0.326 \%$ | $0.393 \%$ |
| 50 | $0.216 \%$ | $0.343 \%$ |
| 55 | $0.013 \%$ | $0.248 \%$ |
| 60 | $0.000 \%$ | $0.012 \%$ |
| 65 | $0.000 \%$ | $0.000 \%$ |
| 70 | $0.000 \%$ | $0.000 \%$ |
| 75 | $0.000 \%$ | $0.000 \%$ |
| 80 | $0.000 \%$ | $0.000 \%$ |

1. Disability recovery after verification of the ability to return to work in the same position as determined by the Plan's Disability manager.
2. Disability Allowance: According to the following table as shown for illustrative ages:

| Age |  | Rate of <br> Disability |
| :---: | :---: | :---: |
| 25 |  | $0.10 \%$ |
| 30 |  | $0.10 \%$ |
| 35 |  | $0.20 \%$ |
| 40 |  | $0.30 \%$ |
| 45 |  | $0.40 \%$ |
| 50 |  | $0.50 \%$ |
| 55 |  | $0.60 \%$ |
| 60 |  | $0.70 \%$ |
| $65 \&$ older |  | $0.78 \%$ |

If service is 25 or greater, no disability is assumed.

## 13. Service Retirements ${ }^{1,2}$ :

| Age | Pre 9/5/2001 Hires Probability of Retirement |  | Hired 9/5/2001-1/18/2008 Probability of Retirement |  | Post 1/18/2008 Hires Probability of Retirement |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Service<25 | Service>25 | Service<25 | Service>25 | Service<25 | Service>25 |
| 55 | 1.50\% | 25.00\% | 1.50\% | 25.00\% | 1.50\% | 1.50\% |
| 56 | 1.50\% | 27.50\% | 1.50\% | 27.50\% | 1.50\% | 1.50\% |
| 57 | 2.00\% | 30.00\% | 2.00\% | 30.00\% | 2.00\% | 2.00\% |
| 58 | 2.00\% | 32.50\% | 2.00\% | 32.50\% | 2.00\% | 2.00\% |
| 59 | 2.00\% | 35.00\% | 2.00\% | 35.00\% | 2.00\% | 2.00\% |
| 60 | 2.50\% | 37.50\% | 2.50\% | 37.50\% | 2.50\% | 2.50\% |
| 61 | 4.00\% | 40.00\% | 4.00\% | 40.00\% | 4.00\% | 4.00\% |
| 62 | 15.00\% | 42.50\% | 15.00\% | 42.50\% | 20.00\% | 20.00\% |
| 63 | 15.00\% | 45.00\% | 15.00\% | 45.00\% | 15.00\% | 15.00\% |
| 64 | 20.00\% | 47.50\% | 20.00\% | 47.50\% | 15.00\% | 15.00\% |
| 65 | 30.00\% | 50.00\% | 30.00\% | 50.00\% | 60.00\% | 60.00\% |
| 66 | 30.00\% | 50.00\% | 30.00\% | 50.00\% | 25.00\% | 25.00\% |
| 67 | 30.00\% | 60.00\% | 30.00\% | 60.00\% | 25.00\% | 25.00\% |
| 68 | 50.00\% | 70.00\% | 50.00\% | 70.00\% | 25.00\% | 25.00\% |
| 69 | 50.00\% | 80.00\% | 50.00\% | 80.00\% | 25.00\% | 25.00\% |
| 70 | 100.00\% | 100.00\% | 100.00\% | 100.00\% | 100.00\% | 100.00\% |

1. Rates apply only for members with greater than 10 years of service. Members with less than 10 years of service are assumed to defer retirement until eligible for retiree healthcare benefits. For all ages 55 and above, $10 \%$ is added to the rate at 10 years of service.
2. For ages under 65, the above rates are multiplied by $75 \%$ if service is between 22 and 23 years, $50 \%$ if service is between 23 and 24 years, and $25 \%$ if service is between 24 and 25 years.
3. Spouse Data: $75 \%$ of employees eligible at retirement are assumed to be married, $50 \%$ of those married are assumed to elect a spouse option (Option A-50\%) and the average equivalency factor to convert their accrued pension to a spouse option (Option A-50\%) is assumed to be $85 \%$. A wife is assumed to be 3 years younger than her husband. The valuation assumes $50 \%$ of all married retirees will elect healthcare coverage for their dependents. Actual dependent coverage data was used for participants retired as of the valuation date.

## 15. Miscellaneous and Technical Assumptions:

| Pay Increase Timing: | End of (Fiscal) year. |
| :--- | :--- |
| Decrement Timing: | Decrements of all types are assumed to occur mid-year. |

Eligibility Testing: Eligibility for benefits is determined based upon the age nearest birthday and

| Benefit Service: | Exact fractional service from date of participation is used to determine the <br> amount of benefit payable. |
| :--- | :--- |
| Decrement Relativity: $\quad$Decrement rates are used directly based on assumptions, without adjustment <br> for multiple decrement table effects. |  |

Decrement Operation: Disability and turnover do not operate after 25 years of service.

Eligibility—All non-temporary employees of the Chicago Transit Authority are included in the Plan after completing 12 months of continuous service unless specifically excluded by the terms of a collective bargaining agreement. Exempt non-vested employees may opt out of the plan. Chicago Transit Authority Board members are not included.

Contributions-The Chicago Transit Authority will contribute a percent of compensation for all participating employees and each participating employee will contribute a percent of his compensation to the Plan according to the following schedule:

|  | Contribution Percentage |  |  |
| :--- | :--- | :---: | :---: |
|  | Dates |  | Authority |
| July 1, 1997 until January 18, 2008 |  | $3 \%$ | $3 \%$ |
| January 18 and thereafter |  | $12 \%$ | $6 \%$ |

For years through 2040, the amount paid by the Authority with respect to debt service on bonds issued for contribution to the Retirement Plan shall be treated as a credit against the amount of required contribution up to an amount not to exceed six percent of compensation paid by the Authority in the following year.

Minimum contributions as set forth on page 25 of this report may also apply.
Normal Retirement-The normal retirement age is 65. For employees retiring on or after January 1, 2001 the annual normal retirement pension is equal to the sum of (a) and (b) below, but not greater than $70.0 \%$ of the employee's average annual compensation:
(a) $1 \%$ of the employee's past service compensation as of May 31, 1948, for each full year of continuous service prior to June 1, 1949, plus
(b) $2.15 \%$ of average annual compensation for each year (and fraction of completed calendar months) of continuous service after June 1, 1949.

Average annual compensation is equal to the highest average compensation over any four calendar years out of the final 10 calendar years prior to normal retirement (or actual retirement, if later). If an employee has at least 20 years of service, his minimum annual pension is $\$ 2,220$.

## Early Retirement:

Employees hired before January 18, 2008: An employee may retire early after attaining age 55 and completing at least three years of continuous service, or after completion of 25 years of continuous service. The early retirement pension is equal to the accrued normal retirement pension based on compensation and service at early retirement, reduced by $5 \%$ for each year or fraction younger than age 65 . The $5 \%$ per year reduction is not applied if the employee has at least 25 years of service. Employees hired after September 5, 2001 may retire early with unreduced benefits after attaining age 55 and completing at least 25 years of service.

Employees hired on and after January 18, 2008: An employee may retire with unreduced benefits upon attainment of age 64 with 25 years of service. An employee may retire with a benefit reduced as described above upon attainment of age 55 with 10 years of continuous service.

## Disability Allowance:

An employee is eligible for a disability allowance if he becomes disabled after completing 10 years of service, or if his disability after completing five years of service is covered under the Workmen's Compensation Act. An employee is disabled if he either (a) is totally and permanently disabled or (b) is unable to return to work after receiving 26 weeks of benefits under the Authority's Group Accident and Sickness Insurance or from the Authority under the Workmen's Compensation Act. An employee is subject to a 26 week waiting period before disability allowance benefits are provided. The disability allowance is equal to the normal retirement pension based on compensation and service at disability subject to a minimum annual pension of $\$ 4,800$.

## Death Benefits:

If an employee dies prior to retirement or disability and after one year of service, his contributions, accumulated with interest, are paid to his beneficiary. "Interest" is equal to the rate of interest earned by the Fund (to a maximum of $2 \%$ ) prior to January 1, 1971, $1 / 2$ of the rate of interest earned by the Fund (to a maximum of $3 \%$ ) between January 1, 1971, and January 1, 1980, and 3\% after December 31, 1979. If an employee dies after 90 days of service but prior to one year of service, his contributions, without interest, are paid to his beneficiary; and if he dies prior to 90 days of service, his contributions are not refunded.

If an employee is eligible for early retirement, he is automatically covered by a surviving spouse benefit, payable upon his death prior to retirement, in lieu of a return of his contributions. The spouse benefit is equal to $1 / 2$ of the pension which would have been payable to the employee if he had retired on the first day of the month of his death and had elected an optional form of pension providing $1 / 2$ of his reduced pension to his surviving spouse. Employees may elect not to be covered by this option and provide for the payment of their contributions with interest to their beneficiary in lieu thereof.

If an employee dies after his retirement pension has commenced, his beneficiary receives the excess, if any, of his contributions, accumulated with interest to his retirement date, over the sum of the pension payments made to him. However, if his surviving spouse is entitled to a pension after his death, such excess will not be paid to his beneficiary. At the death of the surviving spouse, the excess, if any, of the contributions accumulated with interest to his retirement date over the sum of the pension payments made to him and his surviving spouse will be paid.

A retired employee's beneficiary will receive a death benefit equal to the amount from the following schedule according to the employee's age and service at retirement:

| Age | Service | Age+Service | Death Benefit |
| :---: | :---: | :---: | :---: |
| 65 | 20 | N/A | \$8,000 |
| 60 | N/A | 90 | \$8,000 |
| N/A | 25 | N/A | \$8,000 |
| N/A | N/A | 94 | \$8,000 |
| 60-64 | 20 | N/A | \$6,000 |
| 55-59 | 20 | N/A | \$5,000 |
| All Others |  |  | \$2,000 |

## Termination Benefits:

If an employee terminates his employment prior to eligibility for retirement or disability and after completing one year of service, he receives a refund of his contributions plus interest (3\% after December 31, 1979). If he terminates after 90 days but prior to one year, he receives his contributions without interest, and if he terminates less than 90 days after hire, he receives no refund. If an employee has completed 10 years of continuous service and elects to leave his contributions in the Plan, he remains entitled to his normal retirement pension beginning at age 65 but based on his compensation and service at termination.

## Optional Benefit Forms:

In lieu of a normal pension, an employee may elect an optional annuity of equivalent actuarial value providing payments of $1 / 2,2 / 3$, or all of his reduced pension to his spouse after his death (Option A).

Alternatively, an employee may elect an optional annuity of equivalent actuarial value providing payments of $1 / 2,2 / 3$, or all of his reduced pension to his spouse after his death with the further provision that his benefit will be restored to the full amount to him after the death of his spouse (Option B).

## Retired Employees:

Benefits for retired employees have been valued according to benefits in effect at time of retirement as modified by subsequent amendments. Such benefits are kept on records maintained by the Authority.

## Voluntary Early Retirement Incentive Program:

During 1997, the Plan was amended to offer enhanced retirement benefits to all employees who have at least 25 years of continuous service on or before December 31, 1999, and who have not retired prior to January 1, 1997. Those eligible on or before June 30, 1997 must elect to participate during the period March 1, 1997, to June 30, 1997. Employees eligible during the period July 1, 1997, to December 31, 1999, must elect to participate between July 1, 1997, and February 28, 1998. All eligible employees who elect to participate must retire no later than December 31, 1999. The benefit is determined based on a formula multiplier of $2.40 \%$ of average annual compensation with the benefit cap at $70.0 \%$ of such average annual compensation.

## Ad hoc increases in retiree benefits:

As part of the Arbitration Award ruling of November 13, 2003, the following ad hoc increases were given to retirees in payment status as of January 1, 2000:
(a) $\quad \$ 75$ per month for members retired before January 1,1980
(b) $\quad \$ 50$ per month for members who retired on or after January 1, 1980, but before January 1, 1991
(c) $\$ 40$ per month for members who retired on or after January 1, 1991, but before January 1, 2000

# SECTION V - SUMMARY OF PLAN AND CONTRIBUTION PROVISIONS 

## Contribution Requirements Under P.A. 95-0708

Beginning January 18, 2008, the Authority shall make contributions to the Retirement Plan in an amount equal to 12 percent of compensation and participating employees shall make contributions in an amount equal to six percent of compensation. For years through 2040, the amount paid by the Authority with respect to debt service on bonds issued for contribution to the Retirement Plan shall be treated as a credit against the amount of required contribution, up to an amount not to exceed six percent of compensation paid by the Authority in the following year.

If the funded ratio is projected to decline below 60 percent in any year before 2040 using reasonable actuarial assumptions and the projected unit credit funding method, the contribution shall be increased so that the funded ratio is not projected to drop below 60 percent. If the funded ratio actually drops below 60 percent in any year before 2040, the contribution shall be increased so that the funded ratio is projected to reach 60 percent within 10 years. The increase in contributions shall be effective as of the January 1 following the determination, or 30 days following the determination, whichever is later. One-third of the increase in contributions shall be paid by participating employees and two-thirds by the Authority.

Beginning in 2040, the minimum contribution for each fiscal year shall be redetermined each year as the amount required to bring the total assets of the Retirement Plan up to 90 percent of the total actuarial liabilities by the end of 2059, using the projected unit credit funding actuarial cost method and reasonable actuarial assumptions. Participating employees shall be responsible for one-third of the required contribution and the Authority shall be responsible for two-thirds of the required contribution.

Beginning in 2060, the minimum contribution for each year shall be an amount needed to maintain the total assets of the Retirement Plan at 90 percent of the total actuarial liabilities of the Plan and the contribution shall be funded one-third by participating employees and two-thirds by the Authority.

## SECTION VI - DEMOGRAPHICS

A. Summary of Membership Data as of January 1, 2011
(\$ in thousands)

## Active Employees

| Item | Male | Female | Total |
| :--- | :---: | :---: | :---: |
| Number of Members $^{1}$ | 6,279 | 2,653 | 8,932 |
| Annual Salaries $^{2}$ | $\$ 384,150$ | $\$ 144,138$ | $\$ 528,288$ |
| Average Age $^{1}$ | 47.43 | 45.92 | 46.98 |
| Average Service $^{1}$ | 14.35 | 12.32 | 13.74 |

Terminated Vested Employees

| Item | Male | Female | Total |
| :--- | :---: | :---: | :---: |
| Number of Members | 46 | 14 | 60 |
| Annual Accrued Benefit | $\$ 1,002$ | $\$ 377$ | $\$ 1,379$ |
| Average Age | 55.16 | 53.96 | 54.88 |

## Retirees and Beneficiaries

| Item | Male | Female | Total |
| :--- | :---: | :---: | :---: |
| Number of Members | 6,520 |  |  |
| Annual Retirement Benefit | $\$ 169,526$ | $\$ 32,764$ | 8,397 |
| Average Age | 68.87 | 70.52 | $\$ 202,290$ |

## Disabled Retirees

| Item | Male | Female | Total |
| :--- | :---: | :---: | :---: |
| Number of Members | 558 | 355 | 913 |
| Annual Disability Benefit | $\$ 8,345$ | $\$ 4,647$ | $\$ 12,992$ |
| Average Age | 63.61 | 62.26 | 63.09 |

1. Active statistics include all participants who are actively employed which includes 14 participants who are on leave and 53 participants who have opted out of participating in the Plan and are only entitled to a return of their contributions.
2. The salary information for the 53 participants who have opted out of participating in the Plan is not included.
B. Active Membership Data as of January 1, 2011

Number of Participants

| Age | Years of Service |  |  |  |  |  |  |  |  | Total |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 0-4 | 5-9 | 10-14 | 15-19 | 20-23 | 24-29 | 29-33 | 35-38 | 39+ |  |
| Under 24 | 33 | 1 | - | - | - | - | - | - | - | 34 |
| 24-29 | 220 | 96 | 3 | - | - | - | - | - | - | 319 |
| 29-33 | 240 | 347 | 129 | 5 | - | - | - | - | - | 721 |
| 35-38 | 233 | 360 | 363 | 103 | 7 | - | - | - | - | 1,066 |
| 39-44 | 183 | 394 | 436 | 345 | 158 | 3 | - | - | - | 1,519 |
| 44-51 | 166 | 317 | 450 | 364 | 375 | 103 | - | - | - | 1,775 |
| 50-54 | 126 | 272 | 349 | 278 | 351 | 172 | 72 | 5 | - | 1,625 |
| 55-59 | 66 | 150 | 212 | 189 | 221 | 91 | 129 | 35 | 4 | 1,097 |
| 60-64 | 35 | 87 | 112 | 112 | 113 | 50 | 61 | 26 | 20 | 616 |
| Over 64 | 8 | 24 | 25 | 23 | 29 | 15 | 17 | 6 | 13 | 160 |
| Total | 1,310 | 2,048 | 2,079 | 1,419 | 1,254 | 434 | 279 | 72 | 37 | 8,932 |

## C. Retiree and Beneficiary Census Data as of January 1, 2011

Number and Average Annual Allowance

| Age Last Birthday | Number | Annual Allowances |  | Average Allowance |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Retired Annuitants |  |  |  |  |  |
| Under 50 | 16 | \$ | 592,112 | \$ | 37,007 |
| 50-54 | 239 | \$ | 8,757,450 | \$ | 36,642 |
| 55-59 | 861 | \$ | 28,465,402 | \$ | 33,061 |
| 60-64 | 1,774 | \$ | 51,964,983 | \$ | 29,293 |
| 65-69 | 1,878 | \$ | 49,159,160 | \$ | 26,176 |
| 70-74 | 1,245 | \$ | 28,787,984 | \$ | 23,123 |
| 75-79 | 744 | \$ | 14,245,326 | \$ | 19,147 |
| Over 79 | 844 | \$ | 12,603,590 | \$ | 14,933 |
| Total | 7,601 | \$ | 194,576,007 | \$ | 25,599 |
| Surviving Spouses |  |  |  |  |  |
| Under 50 | 10 | \$ | 118,485 | \$ | 11,849 |
| 50-54 | 22 | \$ | 280,339 | \$ | 12,743 |
| 55-59 | 32 | \$ | 415,080 | \$ | 12,971 |
| 60-64 | 70 | \$ | 1,083,828 | \$ | 15,483 |
| 65-69 | 103 | \$ | 1,104,334 | \$ | 10,722 |
| 70-74 | 107 | \$ | 1,061,944 | \$ | 9,925 |
| 75-79 | 109 | \$ | 1,048,781 | \$ | 9,622 |
| Over 79 | 343 | \$ | 2,601,092 | \$ | 7,583 |
| Total | 796 | \$ | 7,713,882 | \$ | 9,691 |
| Disability Retirees |  |  |  |  |  |
| Under 50 | 67 | \$ | 989,791 | \$ | 14,773 |
| 50-54 | 84 | \$ | 1,320,926 | \$ | 15,725 |
| 55-59 | 150 | \$ | 2,467,745 | \$ | 16,452 |
| 60-64 | 243 | \$ | 3,468,667 | \$ | 14,274 |
| 65-69 | 182 | \$ | 2,509,802 | \$ | 13,790 |
| 70-74 | 114 | \$ | 1,395,699 | \$ | 12,243 |
| 75-79 | 53 | \$ | 645,349 | \$ | 12,176 |
| Over 79 | 20 | \$ | 194,284 | \$ | 9,714 |
| Total | 913 | \$ | 12,992,263 | \$ | 14,230 |

## SECTION VI - DEMOGRAPHICS

## D. Terminated Vested Employee Data as of January 1, 2011

## Number and Average Accrued Benefit

| Age Last Birthday | Number | Annual Accrued <br> Benefit | Average Accrued <br> Benefit |  |  |
| :---: | :---: | :---: | :---: | ---: | ---: |
| Terminated Vested |  |  |  |  |  |
| Under 35 | 0 | $\$$ | - | $\$$ |  |
| $35-39$ | 1 | $\$$ | 15,592 | $\$$ | 15,592 |
| $40-44$ | 1 | $\$$ | 20,702 | $\$$ | 20,702 |
| $45-49$ | 8 | $\$$ | 256,831 | $\$$ | 32,104 |
| $50-54$ | 19 | $\$$ | 556,924 | $\$$ | 29,312 |
| $55-59$ | 19 | $\$$ | 349,275 | $\$$ | 18,383 |
| $60-64$ | 12 | $\$$ | 179,491 | $\$$ | 14,958 |
| $65-69$ | 0 | $\$$ | - | $\$$ | - |
| $70-74$ | 0 | $\$$ | - | $\$$ | - |
| Over 74 | 0 | $\$$ | - | $\$$ | -1, |
| Total | 60 | $\$$ | $1,378,815$ | $\$$ | 22,980 |

