STATE OF ILLINOIS

OFFICE OF THE AUDITOR GENERAL

2017 ANNUAL REVIEW

INFORMATION SUBMITTED BY THE RETIREMENT PLAN FOR CHICAGO TRANSIT AUTHORITY EMPLOYEES

NOVEMBER 2017

FRANK J. MAUTINO

AUDITOR GENERAL
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To the Legislative Audit Commission, the Speaker and Minority Leader of the House of Representatives, the President and Minority Leader of the Senate, the members of the General Assembly, and the Governor:

This is our 2017 Annual Review of Information Submitted by the Retirement Plan for Chicago Transit Authority Employees.

The review was conducted pursuant to Public Act 95-708 which amended the Illinois State Auditing Act by adding a requirement for the Auditor General to annually review and report on information submitted by the Board of Trustees of the Retirement Plan for Chicago Transit Authority Employees.

The report for this review is transmitted in conformance with Section 5/3-2.3(e) of the Illinois State Auditing Act.

FRANK J. MAUTINO
Auditor General

Springfield, Illinois
November 2017
The Illinois State Auditing Act requires the Retirement Plan for Chicago Transit Authority Employees (Retirement Plan) to submit to the Office of the Auditor General (OAG) an audit, an annual statement, and an actuarial statement by September 30 of each year. The OAG reviewed the documents submitted by the Retirement Plan and concluded that they met the requirements of the Auditing Act.

The funded ratio of the Retirement Plan decreased from 53.4 percent in the January 1, 2016 Valuation to 52.5 percent in the January 1, 2017 Valuation. When the funded ratio declines below 60 percent, the Pension Code requires that contribution rates be increased so that the funded ratio is projected to reach 60 percent within 10 years. The contribution rates adopted by the Retirement Plan Board for 2018 were increased from the 2017 contribution rates. The employer contribution rate (which is net of the employer debt service credit of 6% of pay) increased from 17.925 percent in 2017 to 18.019 percent in 2018 and the employee contribution rate increased from 11.962 percent in 2017 to 12.010 percent in 2018.

The OAG and our consultants, Aon, reviewed the Retirement Plan’s assumptions contained in the January 1, 2017 Actuarial Valuation and concluded that they were not unreasonable in the aggregate. However, we believe that three of the assumptions should continue to be monitored and justified on an annual basis.

- Investment return assumption: The 8.25 percent investment return assumption used by the Plan remains at the upper end of investment return assumptions used by other plans. Both the Plan’s actuary and Investment Consultant conducted projections that concluded the Plan’s investments have a reasonable likelihood of achieving an investment return of 8.25 percent over a 10 to 30 year period. We recommend that the Plan continue to annually review the reasonableness of its investment return assumption.

- Mortality assumption: The mortality assumptions used by the Plan were chosen before final 2014 mortality tables were issued by the Society of Actuaries. We recommend that a new mortality analysis be conducted for the Plan, on a benefits-weighted basis, in time to reflect the results in the assumptions that are adopted and used for next year’s valuation.

- Active participant assumption: The active participant headcount decreased from the prior year and the ratio of active participants to annuitants continued to decrease. Given the impact such a decline can have on future contribution levels, we recommend that the Plan continue to monitor the use of a constant headcount assumption.

This report does not constitute an audit as that term is defined in generally accepted government auditing standards.
# STATUTORY REQUIREMENTS

The Illinois State Auditing Act (30 ILCS 5/3-2.3(e)) requires the Retirement Plan for Chicago Transit Authority Employees (Retirement Plan) to submit to the Office of the Auditor General (OAG) an audit, an annual statement, and an actuarial statement by September 30 of each year.

- On September 29, 2017, the OAG received these documents from the Retirement Plan.
- The OAG reviewed these documents and concluded that they met the requirements of the Auditing Act.

In addition, the Illinois Pension Code (40 ILCS 5/22-101(e)(3)) requires the Retirement Plan to determine, based on a report prepared by an enrolled actuary, the estimated funded ratio of the Retirement Plan’s total assets to its total actuarially determined liabilities.

- The Plan is also required to determine the employee and employer contribution rates needed to meet funding requirements established by the Pension Code.
- The Auditor General is required to review the determination and the assumptions on which it is based and determine whether they are “unreasonable in the aggregate”. (pages 3-5)

## REVIEW OF ACTUARIAL VALUATION

The Retirement Plan submitted the Actuarial Valuation as of January 1, 2017, to the OAG on September 29, 2017. This Actuarial Valuation was presented to the Retirement Plan Board at its September 28, 2017 meeting. At that meeting, the Board of Trustees accepted the January 1, 2017 Actuarial Valuation and certified the employer and employee contribution rates for 2018.

The OAG and our consultants, Aon, reviewed the Retirement Plan’s assumptions contained in the January 1, 2017 Actuarial Valuation and concluded that they were not unreasonable in the aggregate. While recognizing the Plan’s policy of completing an experience study every five years, we believe that three of the assumptions – investment return, mortality, and number of active future participants – should continue to be monitored and justified on an annual basis. Further, we
recommend that a mortality analysis be completed in time to reflect the results in the assumptions used for next year’s actuarial valuation.

In 2014, the Plan’s actuary completed an experience study for the five year period ending December 31, 2012. An experience study assesses how well assumptions used by the Plan align with the actual experience of the Plan. If past experience differs from the assumptions used, then the actuary may recommend revisions to the assumptions used in future valuations.

As a result of the experience study, the Plan lowered its investment return assumption from 8.50 percent to 8.25 percent in the January 1, 2014 Actuarial Valuation. The January 1, 2017 Actuarial Valuation continues to use the 8.25 percent rate of return.

Our prior reviews have concluded that the investment return assumptions used by the Plan were at the upper range of investment return assumptions for comparable plans. The 8.25 percent investment return assumption remains at the upper end of investment return assumptions used by other plans. The Plan’s December 31, 2016 Investment Report shows that the Plan’s investments have earned 5.3 percent over the past 10 years. Both the Plan’s actuary, as well as the Plan’s Investment Consultant, conducted projections that concluded the Plan’s investments have a reasonable likelihood of achieving an investment return of 8.25 percent over a 10 to 30 year period. However, we continue to recommend that the Plan annually review the reasonableness of its investment return assumption, rather than wait for the next experience study.

After the 2014 experience study, the Plan adopted generational mortality tables to account for future mortality improvements. The assumptions used in the January 1, 2015 Valuation continue to be used in the January 1, 2017 Valuation. However, the assumptions were chosen before final 2014 mortality tables were issued by the Society of Actuaries. We recommend that a new mortality analysis be conducted for the Plan, on a benefits-weighted basis, in time to reflect the results in the assumptions that are adopted and used for next year’s valuation.
The Retirement Plan’s active participant headcount decreased from the prior year and the ratio of active participants to annuitants continued to decrease. A study sponsored by the National Association of State Retirement Administrators titled the Public Fund Survey Summary of Findings for FY 2015 states “When combined with an unfunded liability, however, a low or declining ratio of actives to annuitants can cause fiscal distress for a pension plan sponsor....” We recommend that the Plan continue to monitor the use of a constant headcount assumption. (pages 4-9)

CONTRIBUTION RATES

The Pension Code requires the Chicago Transit Authority (CTA) to contribute 12 percent of pay, less up to a 6 percent credit for debt service paid on the bonds issued for contribution to the Retirement Plan; employees are required to pay 6 percent of pay. The Pension Code further requires that contribution rates be increased if the funded ratio is projected to decline below 60 percent prior to 2040, with the CTA paying two-thirds and employees paying one-third of the required contribution.

The funded ratio of the Retirement Plan decreased from 53.4 percent in the January 1, 2016 Valuation to 52.5 percent in the January 1, 2017 Valuation. At January 1, 2017, the Plan’s assets totaled $1.752 billion and the actuarial accrued liability was $3.339 billion, according to the Plan’s January 1, 2017 Actuarial Valuation.

Since the funded ratio of the Plan was below 60 percent in the January 1, 2017 Valuation, the Pension Code requires the Plan to “... determine the increased contribution required each year as a level percentage of payroll during the years after the then current year ... so the funded ratio is projected to reach at least 60% no later than 10 years after the then current year and include that determination in its report.” (40 ILCS 5/22-101(e)(3)) The contribution rates adopted by the Retirement Plan Board for 2018 were increased from the 2017 contribution rates. In 2017, the employer contribution rate was 17.925 percent (which is net of the employer debt service credit of 6% of pay) and the employee contribution rate was 11.962 percent. For 2018, the rates were increased so that the employer contribution rate will become 18.019 percent (which is net of the employer debt service credit of 6% of pay) and the employee contribution rate will become 12.010 percent. (pages 10-11)
AGENCY REVIEW

A draft of this Review was provided to the Retirement Plan for their review. The Retirement Plan commented that, with respect to the review of assumptions, the Plan has adopted a practice of having the actuary perform an experience review every five years. The next review will be performed in time to be used for the January 1, 2019 valuation. The Plan will continue to monitor these assumptions with the annual gain and loss process and make changes as needed.

This report does not constitute an audit as that term is defined in generally accepted government auditing standards.

This Annual Review was conducted by OAG staff with the assistance of our consultants, Aon.

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AMEEN DADA
Division Director

This report is transmitted in accordance with Section 3-14 of the Illinois State Auditing Act.

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FRANK J. MAUTINO
Auditor General

FJM:DJB
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Information Submitted by the Retirement Plan for CTA Employees

The Illinois State Auditing Act (30 ILCS 5/3-2.3(e)), as amended by Public Act 95-708, requires the Auditor General to review certain documents submitted by the Board of Trustees of the Retirement Plan for Chicago Transit Authority Employees (Retirement Plan). In addition, the Illinois Pension Code (40 ILCS 5/22-101(e)(3)) requires:

• The Retirement Plan to determine, based on a report prepared by an enrolled actuary, the estimated funded ratio of the Retirement Plan’s total assets to its total actuarially determined liabilities.

• The Retirement Plan to determine the employee and employer contribution rates needed to meet funding requirements established by the Pension Code.

• The Auditor General to review the determination and the assumptions on which it is based and determine whether they are “unreasonable in the aggregate”.

REPORT CONCLUSIONS

The Retirement Plan is required to submit to the Auditor General an audit, an annual statement, and an actuarial statement by September 30 of each year. On September 29, 2017, the Auditor General received these documents from the Retirement Plan. The Auditor General reviewed these documents and concluded that the documents complied with the requirements established in the Auditing Act.

The Retirement Plan submitted its January 1, 2017 Actuarial Valuation to the Auditor General on September 29, 2017. This Actuarial Valuation was presented to the Retirement Plan Board at its September 28, 2017 meeting. At that meeting, the Board of Trustees accepted the January 1, 2017 Actuarial Valuation and certified the employer and employee contribution rates for 2018.

The Office of the Auditor General and our consultants, Aon, reviewed the Retirement Plan’s assumptions contained in the January 1, 2017 Actuarial Valuation and concluded that they were not unreasonable in the aggregate. While recognizing the Plan’s policy of completing an experience study every five years, we believe that three of the assumptions – investment return, mortality, and number of active future participants – should continue to be monitored and justified on an annual basis. Further, we recommend that a mortality analysis be completed in time to reflect the results in the assumptions used for next year’s actuarial valuation.

In 2014, the Plan’s actuary completed an experience study for the five year period ending December 31, 2012. An experience study assesses how well assumptions used by the Plan align
with the actual experience of the Plan. If past experience differs from the assumptions used, then the actuary may recommend revisions to the assumptions used in future valuations.

As a result of the experience study, the Plan lowered its investment return assumption from 8.50 percent to 8.25 percent in the January 1, 2014 Actuarial Valuation. The January 1, 2017 Actuarial Valuation continues to use the 8.25 percent rate of return.

Our prior reviews have concluded that the investment return assumptions used by the Plan were at the upper range of investment return assumptions for comparable plans. The 8.25 percent investment return assumption remains at the upper end of investment return assumptions used by other plans. The Plan’s December 31, 2016 Investment Report shows that the Plan’s investments have earned 5.3 percent over the past 10 years. Both the Plan’s actuary, as well as the Plan’s Investment Consultant, conducted projections that concluded the Plan’s investments have a reasonable likelihood of achieving an investment return of 8.25 percent over a 10 to 30 year period. However, we continue to recommend that the Plan annually review the reasonableness of its investment return assumption, rather than wait for the next experience study.

After the 2014 experience study, the Plan adopted generational mortality tables to account for future mortality improvements. The assumptions used in the January 1, 2015 Valuation continue to be used in the January 1, 2017 Valuation. However, the assumptions were chosen before final 2014 mortality tables were issued by the Society of Actuaries. We recommend that a new mortality analysis be conducted for the Plan, on a benefits-weighted basis, in time to reflect the results in the assumptions that are adopted and used for next year’s valuation.

The Retirement Plan’s active participant headcount decreased from the prior year and the ratio of active participants to annuitants continued to decrease. A study sponsored by the National Association of State Retirement Administrators titled the Public Fund Survey Summary of Findings for FY 2015 states “When combined with an unfunded liability, however, a low or declining ratio of actives to annuitants can cause fiscal distress for a pension plan sponsor....” We recommend that the Plan continue to monitor the use of a constant headcount assumption.

The Pension Code requires the Chicago Transit Authority (CTA) to contribute 12 percent of pay, less up to a 6 percent credit for debt service paid on the bonds issued for contribution to the Retirement Plan; employees are required to pay 6 percent of pay. The Pension Code further requires that contribution rates be increased if the funded ratio is projected to decline below 60 percent prior to 2040, with the CTA paying two-thirds and employees paying one-third of the required contribution.
The funded ratio of the Retirement Plan decreased from 53.4 percent in the January 1, 2016 Valuation to 52.5 percent in the January 1, 2017 Valuation. At January 1, 2017, the Plan’s assets totaled $1.752 billion and the actuarial accrued liability was $3.339 billion, according to the Plan’s January 1, 2017 Actuarial Valuation.

Since the funded ratio of the Plan was below 60 percent in the January 1, 2017 Valuation, the Pension Code requires the Plan to “… determine the increased contribution required each year as a level percentage of payroll during the years after the then current year … so the funded ratio is projected to reach at least 60% no later than 10 years after the then current year and include that determination in its report.” (40 ILCS 5/22-101(e)(3)) The contribution rates adopted by the Retirement Plan Board for 2018 were increased from the 2017 contribution rates. In 2017, the employer contribution rate was 17.925 percent (which is net of the employer debt service credit of 6% of pay) and the employee contribution rate was 11.962 percent. For 2018, the rates were increased so that the employer contribution rate will become 18.019 percent (which is net of the employer debt service credit of 6% of pay) and the employee contribution rate will become 12.010 percent.

The January 1, 2017 Actuarial Valuation concluded that the increased contribution rates applicable for Plan year 2018 should result in the Plan’s funded ratio reaching the statutorily required 60 percent level within 10 years (i.e., by 2027).

BACKGROUND

The Retirement Plan for CTA Employees was significantly underfunded, with a funded ratio of 34 percent as of January 1, 2006. In addition, the Plan was responsible for administering both the retirement benefits and retiree health care benefits. Public Act 94-839 required the CTA to separate the funding for retiree health care benefits from the funding of the retirement system by January 1, 2009.

Public Act 95-708 made sweeping changes to the Retirement Plan for CTA Employees. Public Act 95-708 gave the CTA the authority to issue bonds to help fund both the retirement and retiree health care plans. Public Act 95-708 also established the Retiree Health Care Trust to handle the retiree health care benefits. The Retiree Health Care Trust was established in May 2008.

The legislation also required that the contributions from the CTA and employees must be at a level so that the funded ratio of the Retirement Plan does not decline below 60 percent in any year before 2040, and achieves 90 percent funding by the end of 2059. If the Plan’s funded ratio declines below 60 percent, the Pension Code requires the Board to “… determine the increased contribution required each year as a level percentage of payroll during the years after the then current year … so the funded ratio is projected to reach at least 60% no later than 10 years after the then current year and include that determination in its report.” (40 ILCS 5/22-101(e)(3)) It also stipulates that employees are required to pay one-third of the annual required contribution and the CTA is required to pay two-thirds of the required contribution. During the time period 2009 through 2040, the amount paid by the CTA 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 the compensation paid by the CTA in the following year.

## REVIEW OF RETIREMENT PLAN SUBMISSIONS

The Illinois State Auditing Act (30 ILCS 5/3-2.3(e)) requires the Retirement Plan to submit certain specific documents to the Auditor General by September 30 of each year:

1. **Audit.** The most recent audit or examination of the Retirement Plan;

2. **Annual Statement.** An annual statement containing the information specified in Section 1A-109 of the Illinois Pension Code (see inset); and

3. **Actuarial Statement.** A complete actuarial statement applicable to the prior plan year, which may be the annual report of an enrolled actuary retained by the Retirement Plan specified in Section 22-101(e) of the Illinois Pension Code.

On September 29, 2017, the Auditor General received the three documents listed below from the Retirement Plan. We reviewed the documents and concluded the information required by Section 5/3-2.3(e) of the Auditing Act was contained in these reports:

- Audited Financial Statements for the Retirement Plan for the year ended December 31, 2016;

- An Investment Report dated December 31, 2016; and


### Illinois Pension Code Requirements

The Auditing Act requires the CTA Retirement Plan to annually file with the Auditor General the following information specified in Section 1A-109 of the Pension Code:

1. a financial balance sheet as of the close of the fiscal year;
2. a statement of income and expenditures;
3. an actuarial balance sheet;
4. statistical data reflecting age, service, and salary characteristics concerning all participants;
5. special facts concerning disability or other claims;
6. details on investment transactions that occurred during the fiscal year covered by the report;
7. details on administrative expenses; and
8. such other supporting data and schedules as in the judgement of the Division may be necessary for a proper appraisal of the financial condition of the pension fund and the results of its operations. The annual statement shall also specify the actuarial and interest tables used in the operation of the pension fund.

Source: Pension Code (40 ILCS 5/1A-109) and Auditing Act (30 ILCS 5/3-2.3(e))

### Review of Actuarial Determination and Assumptions

The Illinois Pension Code (40 ILCS 5/22-101(e)(3)) places an additional reporting requirement on the Auditor General. The Code requires that the Retirement Plan:

By September 15 of each year beginning in 2009 and ending on December 31, 2039, on the basis of a report prepared by an enrolled actuary retained by the Plan, the Board of Trustees of the Retirement Plan shall determine the estimated funded ratio of the total assets of the Retirement Plan to its total actuarially determined liabilities. A report containing that
The Pension Code requires the Auditor General to review the determination and the assumptions on which it is based to determine whether they are unreasonable in the aggregate.

The January 1, 2017 Actuarial Valuation was presented to the Retirement Plan Board at its September 28, 2017, meeting. At that meeting, the Board of Trustees accepted the January 1, 2017 Actuarial Valuation and certified the employer and employee contribution rates for 2018. The 2018 rates adopted were increased from the 2017 contribution rates. In 2017, the employer contribution rate was 17.925 percent (which is net of the employer debt service credit of 6% of pay) and the employee contribution rate was 11.962 percent. For 2018, the rates were increased so that the employer contribution rate will become 18.019 percent (which is net of the employer debt service credit of 6% of pay) and the employee contribution rate will become 12.010 percent.

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<tr>
<th>Contribution Rates</th>
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<tr>
<td>2017 rate (old rate)</td>
<td>17.925%</td>
<td>11.962%</td>
</tr>
<tr>
<td>2018 rate (new rate)</td>
<td>18.019%</td>
<td>12.010%</td>
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Review of Actuarial Assumptions Used

Actuarial Standard of Practice No. 27 (ASOP No. 27), effective for measurement dates on or after September 30, 2014, provides guidance on the selection of economic assumptions for measuring pension obligations and dictates that “each economic assumption selected by the actuary should be reasonable” and should have “no significant bias.” It does recognize that “different actuaries will apply different professional judgment and may choose different reasonable assumptions. As a result, a range of reasonable assumptions may develop ... across actuarial practice.”

In 2014, the Plan’s actuary completed an experience study evaluating the key demographic and economic assumptions of the Plan. An experience study assesses how well assumptions used by the Plan align with the actual experience of the Plan. If past experience differs from the assumptions used, then the actuary may recommend revisions to the assumptions used in future valuations. The study examined five years of Plan history, from January 1, 2008 to December 31, 2012. Several of the assumptions used in the Plan’s January 1, 2014 Actuarial Valuation were revised based on the results of the experience study. The January 1, 2017 Actuarial Valuation noted that the assumptions and methods used in that valuation were unchanged from those used in the prior valuation except as follows:

- The Asset method was changed from the Market Value of Assets to a 5-year smoothed Actuarial Value of Assets.

The Board changed the asset method to 5-year smoothing to reduce potential volatility in valuation results in future years.
On September 29, 2017, the Retirement Plan submitted to the Auditor General its Actuarial Valuation as of January 1, 2017, pursuant to 40 ILCS 5/22-101(e)(3). Our consultants, Aon, reviewed the assumptions used in the Retirement Plan’s Actuarial Valuation and found that the assumptions used were not unreasonable in the aggregate.

While the assumptions used in the January 1, 2017 Actuarial Valuation were not unreasonable in the aggregate, three assumptions, the investment return assumption, the mortality assumption, and the active participant assumption, warrant additional discussion.

**Investment Return Assumption**

Our prior reviews have concluded that the investment return assumptions used by the Plan were at the upper range of investment return assumptions for comparable plans. In our 2009 and 2010 Annual Reviews, we noted that the Retirement Plan’s investment return assumption of 8.75 percent, while selected using established standards for pension plans, was an optimistic assumption. In the January 1, 2011 Actuarial Valuation, the Board’s actuary recommended, and the Board approved, a reduction in the investment return assumption to 8.50 percent.

In the January 1, 2014 Valuation, the investment return assumption was reduced from 8.50 percent to 8.25 percent. As part of the experience study performed for the January 1, 2014 Valuation, the Plan’s actuary examined the reasonableness of the 8.50 percent investment return assumption. In a September 2014 presentation to the Board, the Plan’s actuary recommended that the Board adopt the 8.25 percent investment return assumption. The presentation went on to recommend that in future years the Board should consider assuming a lower rate of return assumption. At its September 25, 2014 meeting, the Board adopted the January 1, 2014 Actuarial Valuation which used the 8.25 percent rate of return assumption.

In the January 1, 2017 Actuarial Valuation, the 8.25 percent rate of return remains unchanged from the 2016 Valuation. Regarding the decision to keep the 8.25 percent rate, the Valuation states, “It is based upon a review of the existing portfolio structure, a review of recent experience, and future long-term expectations of rates of return.”

We followed-up with the Plan’s Executive Director about whether the Plan’s actuary conducted analysis of the investment rate of return assumption as part of the January 1, 2017 Actuarial Valuation. The Plan’s actuary prepared an analysis of this assumption based on the allocation, and found a 50th percentile of returns of 9.50 percent over 20 years and 9.65 percent over 30 years. The Plan’s Investment Consultant prepared an analysis and found an expected 10-year return of 8.28 percent. The next experience review will cover the five-year period from January 1, 2013 – December 31, 2017 and will be performed in time to be used with the January 1, 2019 actuarial valuation.

**Comparison with Rates of Returns for Other Pension Plans**

An investment return assumption of 8.25 percent is at the upper range of investment return assumptions for comparable plans. The Public Fund Survey is an online compendium of key characteristics of most of the nation’s largest public retirement systems. The Survey is sponsored by the National Association of State Retirement Administrators. The Public Fund
Survey Summary of Findings for FY 2015, which surveyed 124 public pension plans with estimated combined assets of $3.20 trillion, found a median investment return assumption of 7.50 percent. The investment return assumptions used by the 124 plans ranged from 6.50 percent to 8.50 percent. In the Public Fund Survey’s October 2017 online data, only three plans used an investment return assumption of 8.25 percent or higher.

Wilshire Consulting’s 2017 Report on State Retirement Systems: Funding Levels and Asset Allocation examined the asset allocation and funding levels for 131 state retirement systems. Wilshire estimated that the median state pension fund has a 30-year expected return of 7.40 percent. This median expected return is lower than the current median actuarial interest rate assumption of 7.50 percent used by the plans in the Wilshire report and is lower than the 8.25 percent assumption selected for the CTA Retirement Plan.

In its 2016 Report on City & County Retirement Systems: Funding Levels and Asset Allocation, Wilshire Consulting examined data on 109 city and county retirement systems, 99 of which reported actuarial values on or after June 30, 2015. Wilshire estimated that the median city and county pension fund has a 30-year expected return of 7.30 percent. The 7.30 percent return is lower than the median actuarial interest rate of 7.50 percent for plans in the report, and lower than the 8.25 percent selected by the Retirement Plan. The report states “Using Wilshire’s 30-year longer-term assumptions, 46 of the 109 plans’ assets, in their current allocation, would be projected to earn long-term asset returns above their current discount rates.”

The National Conference on Public Employee Retirement Systems and Cobalt Community Research released the 2016 NCPERS Public Retirement Systems Study in December 2016. NCPERS is a trade association for public sector pension funds, representing more than 500 funds in the United States and Canada. The 2016 study includes responses from 159 state, local, and provincial government pension funds with assets exceeding $1.5 trillion. According to the Study, the average investment return assumption remained unchanged from 2015 at 7.50 percent. The study also found that there was increased activity with respect to lowering the actuarial assumed rate of return. The study stated that “Almost 40 percent of responding funds have lowered their actuarial assumed rate of return, and nearly an additional 30 percent are considering lowering in the future.”

Aon Analysis

Using Aon’s Expected Return Tool (as of the 1st Quarter of 2017) Aon determined that the 35th to 65th percentile range of the CTA Retirement Plan’s investment returns to be 7.87 percent to 6.03 percent, with the 50th percentile rate equal to 6.95 percent. The Retirement Plan’s investment return assumption of 8.25 percent represented the 29.4 percentile in Aon’s tool, assuming that 8.25 percent is net of administrative expenses, as indicated by the Plan’s actuary. The Retirement Plan’s gross investment return assumption of 8.40 percent represents the 27.3 percentile.

The underlying inflation assumption used in Aon’s Expected Return Tool is 2.20 percent, compared to the Plan’s assumption of 3.25 percent. If the results of the tool were adjusted for this difference in the inflation assumption, the resulting 35th to 65th percentile range would be 8.93 percent to 7.09 percent with the 50th percentile rate equal to 8.00 percent. The Retirement
Plan’s investment return assumption of 8.25 percent would then represent the 45.9 percentile in Aon’s tool, assuming that 8.25 percent is net of administrative expenses. The Retirement Plan’s gross investment return assumption of 8.40 percent represents the 43.4 percentile when adjusted to use the inflation assumption of 3.25 percent. The Aon Expected Return Tool calculates the expected portfolio growth rate (50th percentile, geometric return) before any value is added from active management.

**Historical Rates of Return Experienced by the Plan’s Investments**

Over the past 10 years, the rate of return on Retirement Plan investments has been lower than its current 8.25 percent assumed rate of return. For the 10-year period ending December 31, 2016, the Plan’s return on investments was 5.3 percent, according to the Plan’s December 31, 2016 Investment Report. As noted earlier, the Plan’s Investment Consultant projected a total expected return of 8.28 percent over a 10-year term for the Plan’s investments.

**Conclusion: Investment Return Assumption**

The 8.25 percent rate of return assumption is at the upper end of investment return assumptions used by other retirement plans in the United States. The 10-year historical rate of return of 5.3 percent experienced by the Retirement Plan on its investments is less than its 8.25 percent investment return assumption. In 2014, the Plan’s actuary’s recommended that the Board consider lowering this assumption in future years. The Plan’s Investment Consultant expects the Plan’s asset allocation to achieve a total average annualized ten year return of 8.28 percent. We recommend that the reasonableness of this assumption be examined annually, rather than waiting for the next experience study in 2019.

**Mortality Assumption**

Actuarial Standard of Practice No. 35 (ASOP No. 35) provides guidance with respect to mortality improvement before and after the measurement date. After the 2014 experience study, the Plan adopted generational mortality tables to account for future mortality improvements. The assumptions used in the January 1, 2015 Valuation continued to be used in the January 1, 2017 Valuation. The Plan used the RP2000 Blue Collar and Disabled Tables base year 2000 fully generational based on Scale BB. The plan did not experience any significant gain or loss with regards to retiree mortality experience during 2016. Aon has not performed an independent analysis of the mortality improvement.

The Plan’s mortality assumption was chosen before the final RP-2014 and MP-2014 reports were issued by the Society of Actuaries (SOA). The 2014 SOA report stated that it is not inappropriate for actuaries to consider one or more of the RP-2014 tables for public plan use. The SOA has since released three updates to MP-2014 called MP-2015, MP-2016, and MP-2017, and has further indicated their intention to provide annual updates to their mortality model. Consistent with the RP-2000 tables, the new RP-2014 tables are prepared on a benefits-weighted basis, and experience studies using these tables (either RP-2000 or RP-2014) should generally also be performed on a benefits-weighted basis, rather than a headcount-weighted basis. Due to significant changes in mortality rates that were found in the SOA’s recent studies and released in their recent reports, we recommend that a new mortality analysis be conducted for this Plan, on a
benefits-weighted basis, in time to reflect the results in the assumptions that are adopted and used for next year’s actuarial valuation. The Society of Actuaries is currently conducting a review of public sector mortality experience and is expected to release a new table in the fall of next year. The Plan should factor in the results of this study as soon as they are available.

**Active Participant Assumption**

The Retirement Plan’s active participant headcount decreased from the prior year and the ratio of active participants to annuitants continued to decrease. The *Public Fund Survey Summary of Findings for FY 2015* states “When combined with an unfunded liability, however, a low or declining ratio of actives to annuitants can cause fiscal distress for a pension plan sponsor…A lower ratio of actives to annuitants results in costs to amortize a plan’s unfunded liability over a relatively smaller payroll base, which increases the cost of the plan as a percentage of employee payroll.” The Summary goes on to state “A growing number of annuitants, combined with a low or negative rate of growth in active members, will result in a reduction in a retirement system’s external cash flow.”

In the January 1, 2017 Actuarial Valuation, the Retirement Plan’s actuary has assumed a steady future level of active members through the projection period of 2047. To the extent future participation differs from this assumption, the future contribution levels will be impacted. Although the assumption used by the Plan’s actuary in recent years has kept the active headcounts level, the active population has decreased, declining from 8,317 in the 2013 Valuation to 8,186 in the 2014 Valuation. The headcount increased to 8,251 in the 2015 Actuarial Valuation before declining again to 8,204 in the January 1, 2016 Actuarial Valuation and 8,129 in the most recent January 1, 2017 Actuarial Valuation. The active to annuitant ratio has declined from 0.86 in the 2013 Valuation to 0.79 in the 2017 Valuation.

The Plan’s active to annuitant ratio of 0.79 is significantly lower than the average result from the Public Fund Survey of 1.44, and indicates the importance of this ratio to the plan’s finances. While the Plan’s actuary has confirmed the reasonableness of the level headcount assumption with the CTA, we recommend the Plan continue to monitor this assumption and its reasonability.

**Retirement Plan Comment**

The Retirement Plan provided the following written comment regarding the review of assumptions:

With respect to the review of assumptions, the Plan has adopted a practice of having the actuary perform an experience review every 5 years. The last review was adopted by the Board for use with the January 1, 2014 through January 1, 2018 actuarial valuations. The next review will be performed in time to be used for the January 1, 2019 valuation. We will continue to monitor these assumptions with the annual gain and loss process, and make changes if needed to comply with Actuarial Standards of Practice. Changes to reflect short term experience run counter to the concept that assumptions are intended to reflect long-term expectations.
Funded Ratio

The funded ratio of the Retirement Plan as of January 1, 2017, was 52.5 percent, which is a decrease of 0.9 percent from the funded ratio of 53.4 percent in the January 1, 2016 Actuarial Valuation. [Note: The January 1, 2016 Actuarial Valuation reflected both 53.3 percent and 53.4 percent as the funded ratio. The System has now clarified the funded ratio at January 1, 2016 as 53.4 percent, which we are using in this report.] The actuarial value of assets was $1.743 billion at January 1, 2016. At January 1, 2017, the actuarial value of assets was reported at $1.752 billion and the actuarial accrued liability was $3.339 billion.

The Illinois Pension Code (40 ILCS 5/22-101(e)(3)) contains specific requirements regarding the funded ratio of the CTA Retirement Plan. The Code states that:

(3) “…If the actual funded ratio declines below 60% in any year prior to 2040, the Board of Trustees shall also determine the increased contribution required each year as a level percentage of payroll during the years after the then current year using the projected unit credit actuarial cost method so the funded ratio is projected to reach at least 60% no later than 10 years after the then current year and include that determination in its report ….”

The Pension Code requires the CTA to contribute 12 percent of pay, less up to a 6 percent credit for debt service paid on the bonds used to fund the Plan; employees are required to pay 6 percent of pay. If the funded ratio is projected to decline below 60 percent prior to 2040, the Pension Code requires the CTA to pay two-thirds and employees paying one-third of the required contribution.

The funded ratio of the Plan remained under 60 percent in the January 1, 2017 Actuarial Valuation. The Plan’s actuary determined that there was a need to increase contribution rates to comply with the Pension Code. In 2017, the employer contribution rate was 17.925 percent (which is net of the employer debt service credit of 6% of pay) and the employee contribution rate was 11.962 percent. For 2018, the rates were increased so that the employer contribution rate is 18.019 percent (which is net of the employer debt service credit of 6% of pay) and the employee contribution rate is 12.010 percent.

The January 1, 2017 Actuarial Valuation concluded that the increased contribution rates applicable for Plan year 2018 should result in the Plan’s funded ratio reaching the statutorily required 60 percent level within 10 years of 2017 (i.e., by 2027).

The January 1, 2017 Actuarial Valuation notes that differences between the expected experience based on the actuarial assumptions and the actual experience create changes in the actuarial accrued liability, the actuarial value of assets, and the unfunded actuarial accrued liability from one year to the next. These changes create an actuarial gain if the experience is favorable and an actuarial loss if the experience is unfavorable. The Plan experienced a total net actuarial loss of $20.3 million during 2016. The Valuation notes that this net loss is a combination of two principal factors: demographic experience and investment performance.

The January 1, 2017 Actuarial Valuation discloses that the Plan’s demographic assumptions (such as mortality, turnover, retirement, pay increases, etc.) experienced a loss of $16.3 million during 2016. The actual investment rate of return on the actuarial value of Plan
assets was 8.0 percent for the year ending December 31, 2016, compared to the rate of return assumption of 8.25 percent. The lower than assumed rate of return in 2016 resulted in an asset loss of $20.1 million. The actuarial value of the assets recognizes only 20 percent of the 2016 unexpected change in fair value, or $4.0 million, delaying the recognition of the remaining 80 percent over the next four years.

The January 1, 2017 Actuarial Valuation projects the funded ratio of the Plan to be 106.18 percent in year 2039. This is a decrease from last year's projected funded ratio in year 2039 of 114.22 percent.

**Funding Policy**

Although not required by law, the Plan’s actuary recommended in the January 1, 2017 Valuation, and past valuations, that the Board of Trustees consider moving towards contributing based on a more actuarially sound funding policy which they refer to as the “Actuarial Math Funding Policy”. This would include: 1) funding 100 percent of the normal cost on the entry age normal cost basis; 2) using an actuarial value of assets to help mitigate contribution volatility; and 3) pay off the unfunded actuarial accrued liability over a period of 20 years using layered amortization. The Valuation notes that complying with this methodology would result in a total contribution of 34.89 percent, as opposed to the current contribution total of 30.029 percent [18.019 % paid by the CTA (net of the 6% credit for bond repayment) and 12.010% paid by employees]. As noted earlier, the Plan adopted one of the recommended changes by changing the asset method from the Market Value of Assets to a 5-year smoothed Actuarial Value of Assets.

### SCOPE OF ANNUAL REVIEW

The Office of the Auditor General conducted an annual review of information submitted by the Retirement Plan pursuant to the Illinois State Auditing Act and the Illinois Pension Code. This report does not constitute an audit as that term is defined in generally accepted government auditing standards. Consequently, while we reviewed the information provided by the CTA Retirement Plan for reasonableness and consistency, we did not conduct an audit of the accuracy of the information provided as that is the responsibility of the Plan.

The scope of our work included reviewing the information submitted by the Retirement Board on September 29, 2017. This information included: the Audited Financial Statements for the Plan for the year ended December 31, 2016; an Investment Report for the period ending December 31, 2016; and the January 1, 2017 Actuarial Valuation for the Retirement Plan. We
conducted follow-up with the Retirement Plan on various questions we had based upon our review of these documents. The Retirement Plan was provided a draft of this report for its review.

Our consultants, Aon, reviewed the reasonableness of the actuarial assumptions used by the CTA Retirement Plan in their January 1, 2017 Actuarial Valuation.

In prior years, we reported that the Plan’s Executive Director noted that the Matthews case could have a significant impact on either the Retirement Plan or the Retiree Health Care Trust in the magnitude of $100 million or more. The plaintiffs in the Matthews case are current and former employees of the CTA who argue that after years of fully paid health care benefits for retired CTA employees, they are now being asked to pay for a portion of their health care benefits and are no longer entitled to the same level of health care coverage as active CTA employees. The changes to their coverage occurred as a result of an arbitration award and related amendments to the Pension Code made by Public Act 95-708.

The Illinois Supreme Court issued a ruling in the Matthews case on May 5, 2016. The Supreme Court determined that the Class II plaintiffs, the current employees and those that retired after January 1, 2007, lacked standing to challenge the 2007 Collective Bargaining Agreement and affirmed the dismissal of all of their claims. However, the Class I plaintiff, who retired prior to the expiration of the 2004 Collective Bargaining Agreement had standing to challenge the modification to health care benefits.

We inquired of the Executive Director for an update on the status of the case:

The case is now back in the Circuit Court. On May 31, 2017, Plaintiffs were granted leave to file a First Amended Complaint, which removed named plaintiffs whose claims were dismissed, removed the Chicago Transit Authority as a defendant, and largely removed dismissed claims. The case is now captioned Williams et al. v. Retirement Plan for Chicago Transit Authority Employees, et al.

The Retirement Plan for Chicago Transit Authority Employees and the Board of Trustees of the Retirement Plan for Chicago Transit Authority Employees filed a motion to dismiss a portion of the First Amended Complaint, specifically the allegations challenging the composition of the Retirement Plan Board, and answered the remaining counts. The Retiree Health Care Trust and the Board of Trustees of the Retiree Health Care Trust Defendants also filed a motion to dismiss the First Amended Complaint for failure to state a claim. Defendants’ motions to dismiss are being briefed, no hearing date has been set. The parties are engaged in discovery. After discovery, we anticipate the plaintiffs will file a motion for class certification. The Retirement Plan is vigorously defending the matter. At this time, we are unable to determine the amount or range of any potential loss in the event of an unfavorable outcome.

In prior reviews, we noted also that the Retirement Board approved a payroll audit in 2011. The Executive Director stated that the follow-up work by the parties, necessary to close out the findings on the Payroll Audit for the Retirement Plan, covering the period from July 1, 2008 through June 30, 2011, has been completed. Earnings for the Part-Time Union Officers have been adjusted in line with the audit recommendations and the new payroll form for the Unions has been adopted. On the issues of unpaid employee and employer contributions for
settlement agreements and clerical errors, the Plan office had received from the CTA a check for both the employee and employer contributions for the period July 1, 2008 to June 30, 2011. There was no material impact on the valuation.

The Auditor General performed this Review with assistance from our consultants, Aon. Aon’s review concluded that:

(A) The required documents have been submitted and meet the statutory requirements of Section 5/3-2.3(e)(1), (2), and (3) of the Auditing Act.

(B) The assumptions stated in the actuarial report submitted pursuant to 40 ILCS 5/22-101(e)(3) are not unreasonable in the aggregate. While we recognize the plan’s policy of completing an experience study every five years, we believe that three of the assumptions, investment return, mortality, and number of active future participants, should continue to be monitored and justified on an annual basis. Further, we continue to recommend that a mortality analysis be completed in time to reflect the results in the assumptions used for next year’s report.

(C) The Pension Code (40 ILCS 5/22-101(e)(3)) indicates that if the plan’s funded ratio is projected to fall below 60 percent in any year before 2040, minimum contribution rates are to be determined on a level percentage of payroll basis over the years remaining until 2040 that keep the projected funded ratio above 60 percent in all years through 2039, based on assumptions which are not unreasonable in the aggregate. The Pension Code also indicates that if the actual funded ratio declines below 60 percent in any year prior to 2040, the actuarial report shall also show an increased contribution rate that is determined on a level percentage of payroll basis during the years after the current year such that the funded ratio is projected to reach at least 60 percent no later than 10 years after the then current year. The funded ratio remained below 60 percent for the January 1, 2017 valuation. The projections indicate that the contribution rates adopted in 2017 for the 2018 Plan year of 12.010 percent for employees and 18.019 percent for the employer (with the 6% credit for debt service) are sufficient to bring the funded status to 60 percent (or higher) by 2027 (i.e., 10 years after the current year). The adopted contribution rates of 12.010 percent for employees and 18.019 percent for the employer (with the 6% credit for debt service) are the Statutory Minimum Contribution Rates.
APPENDIX A

STATUTORY AUTHORITY
30 ILCS 5/3-2.3(e) and (f)

(e) Annual Retirement Plan Submission to Auditor General. The Board of Trustees of the Retirement Plan for Chicago Transit Authority Employees established by Section 22-101 of the Illinois Pension Code shall provide the following documents to the Auditor General annually no later than September 30:

(1) the most recent audit or examination of the Retirement Plan;

(2) an annual statement containing the information specified in Section 1A-109 of the Illinois Pension Code; and

(3) a complete actuarial statement applicable to the prior plan year, which may be the annual report of an enrolled actuary retained by the Retirement Plan specified in Section 22-101(e) of the Illinois Pension Code.

The Auditor General shall annually examine the information provided pursuant to this subsection and shall submit a report of the analysis thereof to the General Assembly, including the report specified in Section 22-101(e) of the Illinois Pension Code.


(Source: P.A. 95-708, eff. 1-18-08.)
Annual statements by pension funds. Each pension fund shall furnish to the Division an annual statement in a format prepared by the Division. The Division shall design the form and prescribe the content of the annual statement and, at least 60 days prior to the filing date, shall furnish the form to each pension fund for completion. The annual statement shall be prepared by each fund, properly certified by its officers, and submitted to the Division within 6 months following the close of the fiscal year of the pension fund.

The annual statement shall include, but need not be limited to, the following:

1. a financial balance sheet as of the close of the fiscal year;
2. a statement of income and expenditures;
3. an actuarial balance sheet;
4. statistical data reflecting age, service, and salary characteristics concerning all participants;
5. special facts concerning disability or other claims;
6. details on investment transactions that occurred during the fiscal year covered by the report;
7. details on administrative expenses; and
8. such other supporting data and schedules as in the judgement of the Division may be necessary for a proper appraisal of the financial condition of the pension fund and the results of its operations. The annual statement shall also specify the actuarial and interest tables used in the operation of the pension fund.

(Source: P.A. 90-507, eff. 8-22-97.)

Sec. 22-101(e). Retirement Plan for Chicago Transit Authority Employees.

(1) Beginning January 1, 2009 the Authority shall make contributions to the Retirement Plan in an amount equal to twelve percent (12%) of compensation and participating employees shall make contributions to the Retirement Plan in an amount equal to six percent (6%) of compensation. These contributions may be paid by the Authority and participating employees on a payroll or other periodic basis, but shall in any case be paid to the Retirement Plan at least monthly.

(2) For the period ending December 31, 2040, the amount paid by the Authority in any year with respect to debt service on bonds issued for the purposes of funding a contribution to the Retirement Plan under Section 12c of the Metropolitan Transit Authority Act, other than debt service paid with the proceeds of bonds or notes issued by the Authority for any year after
calendar year 2008, shall be treated as a credit against the amount of required contribution to the Retirement Plan by the Authority under subsection (e)(1) for the following year up to an amount not to exceed 6% of compensation paid by the Authority in that following year.

(3) By September 15 of each year beginning in 2009 and ending on December 31, 2039, on the basis of a report prepared by an enrolled actuary retained by the Plan, the Board of Trustees of the Retirement Plan shall determine the estimated funded ratio of the total assets of the Retirement Plan to its total actuarily determined liabilities. A report containing that determination and the actuarial assumptions on which it is based shall be filed with the Authority, the representatives of its participating employees, the Auditor General of the State of Illinois, and the Regional Transportation Authority. If the funded ratio is projected to decline below 60% in any year before 2040, the Board of Trustees shall also determine the increased contribution required each year as a level percentage of payroll over the years remaining until 2040 using the projected unit credit actuarial cost method so the funded ratio does not decline below 60% and include that determination in its report. If the actual funded ratio declines below 60% in any year prior to 2040, the Board of Trustees shall also determine the increased contribution required each year as a level percentage of payroll during the years after the then current year using the projected unit credit actuarial cost method so the funded ratio is projected to reach at least 60% no later than 10 years after the then current year and include that determination in its report. Within 60 days after receiving the report, the Auditor General shall review the determination and the assumptions on which it is based, and if he finds that the determination and the assumptions on which it is based are unreasonable in the aggregate, he shall issue a new determination of the funded ratio, the assumptions on which it is based and the increased contribution required each year as a level percentage of payroll over the years remaining until 2040 using the projected unit credit actuarial cost method so the funded ratio does not decline below 60%, or, in the event of an actual decline below 60%, so the funded ratio is projected to reach 60% by no later than 10 years after the then current year. If the Board of Trustees or the Auditor General determine that an increased contribution is required to meet the funded ratio required by the subsection, effective January 1 following the determination or 30 days after such determination, whichever is later, one-third of the increased contribution shall be paid by participating employees and two-thirds by the Authority, in addition to the contributions required by this subsection (1).

(4) For the period beginning 2040, the minimum contribution to the Retirement Plan for each fiscal year shall be an amount determined by the Board of Trustees of the Retirement Plan to be sufficient to bring the total assets of the Retirement Plan up to 90% of its total actuarial liabilities by the end of 2059. 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. In making these determinations, the Board of Trustees shall calculate the required contribution each year as a level percentage of payroll over the years remaining to and including fiscal year 2059 using the projected unit credit actuarial cost method. A report containing that determination and the actuarial assumptions on which it is based shall be filed by September 15 of each year with the Authority, the representatives of its participating employees, the Auditor General of the State of Illinois and the Regional Transportation Authority. If the funded ratio is projected to fail to reach 90% by December 31, 2059, the Board of Trustees shall also determine the increased contribution required each year as a level percentage of payroll over the years remaining until December 31, 2059 using the projected unit credit actuarial cost method so the funded ratio will meet 90% by December 31, 2059 and include that determination in its report. Within 60 days
after receiving the report, the Auditor General shall review the determination and the assumptions on which it is based and if he finds that the determination and the assumptions on which it is based are unreasonable in the aggregate, he shall issue a new determination of the funded ratio, the assumptions on which it is based and the increased contribution required each year as a level percentage of payroll over the years remaining until December 31, 2059 using the projected unit credit actuarial cost method so the funded ratio reaches no less than 90% by December 31, 2059. If the Board of Trustees or the Auditor General determine that an increased contribution is required to meet the funded ratio required by this subsection, effective January 1 following the determination or 30 days after such determination, whichever is later, one-third of the increased contribution shall be paid by participating employees and two-thirds by the Authority, in addition to the contributions required by subsection (e)(1).

(5) Beginning in 2060, the minimum contribution for each year shall be the amount needed to maintain the total assets of the Retirement Plan at 90% of the total actuarial liabilities of the Plan, and the contribution shall be funded two-thirds by the Authority and one-third by the participating employees in accordance with this subsection.

(Source: P.A. 95-708, eff. 1-18-08, P.A. 97-442, eff. 8-19-11; P.A. 97-609, eff. 1-1-12; P.A. 97-813, eff. 7-13-12.)