

June, 2018

Copy

Technical Proposal to Provide
Actuarial Services
RFP No. FPEN-180084-DH

City of Gainesville

Table of Contents

Company Overview	3
Business Organization	3
Other Services Available	3
Professional Organizations	4
Financial Stability	4
Experience	5
Our Experience with GASB 74/75	6
Statement of Project Understanding – Pension Actuarial Work	6
Statement of Project Understanding – OPEB Actuarial Valuation	7
Our Approach to...	8
the Client Relationship	8
the Transition of Services to Nyhart	8
Sample Transition Timeline	9
the Annual Actuarial Valuations	9
Sample Pension Valuation Timeline	10
Working with the City’s OPEB Staff	11
a High-Level Project Execution Plan	12
Professional Staff – Pension	13
Tayt Odom, Account Manager / Relationship Manager	13
Danielle Winegardner, Valuation Actuary	14
Professional Staff – OPEB	15
Suraj Datta, Project Manager / Consulting Actuary	15
Emily Clauss, Actuary / Actuary Analyst	16
Randy Gomez, National Healthcare Practice Leader / Peer Review	17
Society of Actuaries	18
References	19
Data Security	20
Appendix	21

Company Overview

Nyhart is an employee benefit consulting, actuarial, and administration firm that has been in business since 1943. We were started as a family-owned business by Howard E. Nyhart and continued as such until 1979 when an ESOP purchased the company. We have been a completely 100% employee owned company since 1991, a unique factor that makes the success of our clients personally important to every one of our 142 employee-owners. We have 33 actuaries on staff.



We provide actuarial services, consulting and administrative services for defined contribution and defined benefit plans, consulting and administrative services for Flexible Spending Accounts (FSA), Health Reimbursement Arrangements (HRA), Health Savings Accounts (HSA) and COBRA, as well as human resource consulting to more than 2,000 clients in 48 States. Headquartered in Indianapolis, IN, we have offices in Atlanta, Chicago, Denver, Houston, Kansas City, New York, San Diego, and St. Louis.

Business Organization

Nyhart is an ESOP (Employee Stock Ownership Plan) corporation. We were incorporated in the State of Indiana in 1955.

Other Services Available

As the employee benefit field widened, so did the services offered by Nyhart. We offer services in the following areas:

- **Retirement Services**
 - ▶ Defined Benefit
 - ❖ Pension Financial Manager
 - ❖ Pension Design Modeler
 - ❖ Online Pension Administration Software
 - ❖ Benefit Statements
 - ▶ Defined Contribution
 - ❖ Balance Forward
 - ❖ Daily Valuation
- **Health Care Actuarial Consulting**
 - ▶ GASB Interactive Modeler
 - ▶ Medicare Part D Subsidy Report
 - ▶ Rate Setting, Design Modeling, & IBNR Reserving for Self-Insured Plans
 - ▶ Medicare Part D Creditable Coverage Determination
 - ▶ ACA Minimum Actuarial Value Determination
 - ▶ Annuity Purchases and Consulting
- **Flex Administration**
 - ▶ Flexible Spending Accounts / Dependent Care Accounts
 - ▶ Health Savings Accounts
 - ▶ Health Reimbursement Accounts
 - ▶ COBRA
- **HR Consulting**
- **Compensation Studies**
- **Votaire**

Professional Organizations

Society of Actuaries	Conference of Consulting Actuaries
American Academy of Actuaries	American Society of Pension Professionals
Indiana Association of Cities and Towns	Government Finance Officers Association
Iowa State Association of Counties	Florida State Association of Counties
Michigan Association of Public Employee Retirement System	

Nyhart participates and speaks at several public plan conferences (IPPFA, IAFPD, MAPERS), FPPTA (Florida) and others to share our thought leadership and learn from other professionals to best serve our public plan clients. Additionally, Nyhart has committed involvement with the Conference of Consulting Actuaries. This organization provides significant sessions on a regular basis throughout the year and at their annual conference. Many of these sessions are focused on public pension plan issues and allows our firm to make sure we are bringing the newest and best ideas to our clients.

Financial Stability

Nyhart is a privately-owned company and, therefore, consider our financial records to be propriety and confidential information. Should Nyhart be chosen as the actuarial firm to assist the City, we will forward our records to the City should they deem that necessary.

You may be assured that Nyhart is a very financially-stable company. We have grown exponentially since our beginning in 1943. We started as a small local firm and we are now a mid-size national firm with offices across the country. We grew from one office to now having nine offices. This type of growth would not be possible if we are not a financially-stable company. As an ESOP company, we wouldn't be able to retain our high-quality employees if we weren't also growing and providing a good ESOP benefit.

Experience

Having worked with a variety of plans for over 35 years, Nyhart consultants understand the history of pension plans and, since 2004, OPEB plans. We understand the necessity of balancing the protection of employees' benefits within the constraints of a budget. Our approach is to involve all stakeholders (e.g. Boards, City, Members), which has proven to be the most efficient and effective approach when analyzing and recommending plan design changes.

As an actuary, we are asked to analyze proposed changes to benefits and to provide Actuarial Impact Statements. We also perform detailed annual gain/loss analyses and periodic experience studies for our clients to ensure that the funding assumptions underlying the calculation of costs for the plan are both reasonable and appropriate. Nyhart serves over 225 pension clients across the United States and has performed over 2,000 GASB 43/45 and valuations, studies, and experience studies since the standard became effective. We have also performed over 125 GASB 74/75 OPEB since September, 2017.

We have supplied actuarial services since our company was founded in 1943. This provides us with a great deal of expertise upon which to draw and we always expect from ourselves to exceed our clients' expectations.

We have supplied the same services to many funds for police, firemen, cities, counties, and states across the country. Our staff serves not only governmental clients, but churches, single employers, multi-employers, and multiple-employer plans. While some providers highlight the value of their public-only focus, we believe our broad experience with plans of varying types and sizes provides a valuable actuarial consulting perspective. To borrow a phrase from a well-known commercial, "We know a few things, because we've seen a few things".¹

Nyhart can be more to the City than just an expense; we can be a significant value.

Our philosophy for providing actuarial consulting services is based on our desire to be a value-added resource and trusted advisor to our clients. We believe this is achieved by consistently performing requested services at a level that meets or exceeds the client's expectations, by putting forth the extra effort to ensure the client's satisfaction, and by maintaining frequent communication with our clients. It is through this kind of relationship that excellent service becomes routine.

Many implicit-only clients are only doing an OPEB valuation to be in compliance with reporting requirements. These clients select an actuary based on price (1st) and recommendations from others (2nd).

Most OPEB clients that started prefunding do not have a long-term strategy. The decision to start funding was made as a starting point to do the proper fiduciary and responsible action. The long-

¹ Farmers Insurance Commercial

term aspects of how long should they fund, what is a reasonable target and when can they start taking money out were delayed to a later time.

Most OPEB and pension clients make short-term decisions such as what they should budget for next year. Nyhart tries to shift their focus from what happened last year to what is going to happen in 5 and 10 years in the future.

Our clients are not actuaries and do not deal with actuarial-related activities very often during the year. It is important to keep the process simple and defined in non-technical terms. It is productive to remind our clients of deadlines and educate them on what their peers are doing and to offer up innovative ideas.

Government-sector clients are more reluctant to reduce benefits than private-sector clients. If benefit reductions are needed, new hires and non-vested employees are the first group to be cut. Retirees and those near retirement age are the last to be affected by benefit reductions.

The implementation of GASB 43/45 had a similar employer reaction as the private sector did when the FAS 106 OPEB standard came out. The increased visibility and large unfunded actuarial liabilities led many employers to reduce or eliminate OPEB plans.

Our Experience with GASB 74/75

Few clients have decided to adopt GASB 74/75 early. For those that did early adopt, their motivations were to stay on the same two-year valuation cycle as before or early adopt because they are a component part of a larger entity that was early adopting.

We have seen a significant number of clients ask for the modeling and consulting advice.

Their key questions are (1) what will the rating agencies do about it and (2) how will it affect the running of their business.

Statement of Project Understanding — Pension Actuarial Work

We understand the services being requested and perform these same services for over 200 pension plan clients daily.

The purpose of an actuarial valuation is 1) to determine the amount of actuarially determined contributions (i.e., an amount that, if contributed consistently and combined with investment earnings, would be sufficient to pay promised benefits in full over the long-term) and 2) to measure the plan's funding progress. Key items to consider in reviewing the valuation report include:

- **Actuarially Determined Contribution.** The actuarially determined contribution represents the amount needed to fund benefits over time. If the contributions are not fully paid, interest accrues on the unpaid portion at the plan's expected long-term rate of return. Persistent underfunding will ultimately jeopardize the plan's sustainability.

- **Liabilities, Assets, and Funded Ratio.** The *actuarial accrued liability* (AAL) represents the present value of benefits earned, calculated using the plan's actuarial cost method. The *actuarial value of assets* (AVA) reflects the financial resources available to liquidate the liability. The *unfunded actuarial accrued liability* (UAAL) is the difference between the AAL and the AVA. The *funded ratio* (AVA/AAL) reflects the extent to which accumulated plan assets are sufficient to pay future benefits.

- **Actuarial Assumptions.** Since no one knows what the future will bring, actuarial valuations are based on assumptions. For an actuarial valuation to be reliable, the assumptions used should reflect the best information available, which should be supported by rigorous discussion and analysis. Also, information concerning the demographic characteristics of the covered population needs to be current.

- **Historical Information.** Certain historical information is especially useful to understanding funding:
 - ▶ Multi-year information on the plan's funding progress that includes the AAL, the AVA, the funded ratio, and the UAAL as a percentage of payroll, consistent with the government's funding policy; and
 - ▶ Multi-year information on both actuarially determined contributions and actual amounts contributed (by definition, if actuarially determined annual required contributions are paid faithfully each year to the plan, the plan should accumulate sufficient resources, over time to pay benefits, regardless of the actuarial cost method selected).

Our firm specializes in not only taking care in helping you understand annual results and how things changed from the prior year, but also dynamically looking at future potential results under a variety of economic scenarios. We believe this second step is critical to best managing the plan for future sustainability and successfully delivering benefits.

Statement of Project Understanding - OPEB Actuarial Valuation

The City of Gainesville will require an actuarial review of their post-employment benefits in accordance with Governmental Accounting Standards Board (GASB) Statements 74/75.

This report will allow implementation and compliance of the GASB rules regarding accounting for OPEB.

The primary objective of Statement 45/75 was to improve accounting and financial reporting by state and local governments for postemployment benefits other than pensions (OPEB). It was also to improve information provided by state and local governmental employers about financial support for OPEB that is provided by other entities.

The new GASB 75 (transition year of FYE 2018) statements require a liability for OPEB known as the Net OPEB Liability to be acknowledged on the balance sheet of the plan and the District. Also, an OPEB expense will be acknowledged in the income statement of the District.

Under GASB 43 and 45, the unfunded actuarial accrued liability for OPEB was reported in the notes for the plan. The most important impact under the new accounting standards is the move from the notes for the plan to the balance sheet of the employer.

Our responsibility will be to provide consulting services to the City and the information it needs to fulfill its OPEB needs. It must be accurate and timely information.

Using the data that the City submits, we have technology and procedures in place to assure the City that we will provide them with the accurate and timely information they require.

Our Approach to...

the Client Relationship

An integral part of being the actuarial consultant to the City of Gainesville is the delivery of proactive consulting and advisement on all matters that may affect them .

Our philosophy for providing actuarial consulting services is based on our desire to be a value-added resource and trusted advisor to our clients. We believe this is achieved by consistently performing requested services at a level that meets or exceeds the client's expectations, by putting forth the extra effort to ensure the client's satisfaction, and by maintaining frequent communication with our clients. It is through this kind of relationship that excellent service becomes routine.

the Transition of Services to Nyhart

There is no fee for the transition process. This is Nyhart's investment in the relationship.

Pension actuarial transitions are generally easy and painless for the plan sponsor. The transition process usually takes approximately eight weeks. A typical transition will include the following components:

- **Planning Meeting / Conference Call:** This meeting will be used to provide a brief review of the transition process, identify data needed (recent plan amendments, SPDs, participant identifiers, etc.), develop the upcoming year's timeline, and identify deliverables.
- **Data Collection:** We will request the participant data and other information needed directly from the actuary to match the prior year's valuation results. If you prefer, we can work with you to collect the appropriate data.
- **Matching Results:** We will conduct a thorough and independent review of the participant data, plan document, and sample benefit calculations to complete an independent valuation.
 - ▶ If there are significant differences in our results compared to the prior actuary for valuation results, we will work directly with them to reconcile the results. This process ensures we fully understand your plans and acts as an independent audit of the actuarial results

- **Present Findings:** We will present our findings of the transition process. This will include a comparison of results between Nyhart and the prior actuary and identify areas that may warrant further review.

Sample Transition Timeline

Timing	Task	Important Comments
Week 1	Conference call to kick-off our relationship	This provides us an opportunity to better understand timing, the City's specific needs, define deliverables, etc.
Weeks 2-5	Match prior year actuarial results	<p>Our first step in this relationship is to ensure we fully understand your retirement plans and make sure we can match the prior year results. During this process, we will complete an audit of last year's valuation. Any significant differences will be reconciled with the actuary who prepared the report. In addition, we will identify any items that may warrant further review with the City.</p> <p>We do not charge for these services. This is our investment in the relationship.</p>
Week 6	Present matching results	We will present the results of our matching of last year's results and identify (if any) areas that may warrant further review.

the Annual Actuarial Valuations

The annual valuation steps are fairly standard and we expect the valuation to be complete within 8 to 12 weeks after receiving all required data. The valuation timeline is determined based on the City's specific needs. The following outlines the typical valuation steps:

- Annual kick-off meeting/conference call to discuss timing requirements for the valuation, data required by Nyhart to complete the valuation, and identify changes (plan amendments, assumptions, etc.) that may be needed.
- Receive, reconcile and clean participant data and claims data.
- Review benefit provisions coding and actuarial assumptions coding. Make any necessary changes.
- Run liability program, check individual test cases, and compare liability results to the projected results based on the prior valuation.
- If actual results vary significantly from projected results, pinpoint the source of the differences and confirm that this year's results are accurate.
- Develop annual recommended contribution based on submitted asset values and calculated liability results.

- Present the valuation results to the client. In addition to the formal report, we provide a management summary report that allows the plan sponsor to focus on the key results. Included in the management summary is several cost projections showing estimated costs over the next five years. These projections are very helpful as different funding strategies are considered.
- After presenting the valuation results, the formal report will be issued.

Sample Pension Valuation Timeline

Note the first year process usually includes some overlap between the transition and valuation timeline. We can structure the timing to ensure we meet your timing needs.

Timing	Task	Important Comments
Week 1	Conference call to kick-off the valuation process	This provides us an opportunity to hear about any changes, identify any topics that may warrant additional review, and confirm timing for the delivery of results.
Weeks 2-4	Request, collect, and reconcile data	We will complete a comprehensive data review to confirm participant movement from last year to this year, complete reasonable checks, etc. In this step, we will also calculate the accrued benefits needed for benefit statements. As part of the accrued benefit calculations, we will conduct additional checks to confirm accrued benefits changed in a reasonable fashion reflecting another year of service and pay changes.
Weeks 5-6	Complete liability calculations and determine gain loss	Trace liability and cost movements and explain factors creating increases or decreases to plan costs.
Weeks 7-8	Develop management summary report and draft valuation report	The management summary report is designed to provide the key results for the City's consideration, identify topics that my warrant further review, review cost projections, and share latest trends in the retirement landscape. The valuation report documents all calculations, assumptions, and participant data used in the valuation.
Week 9	Share draft reports with Board staff	We will issue draft reports and review findings with City staff. This will allow us and the Board staff to identify anything odd about the participant data or results and properly research before presenting to the City.
Weeks 10-11	Issue updated drafts to be delivered to the Board members and present results	We prefer to present valuation results in person. This allows us and our clients to have an open, productive meeting to ensure we have provided our clients with the information they need and answered all questions. When we present valuation results, we consider them to be in draft form. We view the results as draft until we have presented the results and gathered feedback from our clients.
Week 12	Issue final valuation report	Issue final valuation report with any refinements identified during the presentation of results.

Timelines are based on the client's need – not on Nyhart's capacity

Assuming we receive the necessary data in a timely manner, you may be assured we will meet or precede your deadline. If we do not receive the necessary data in a timely manner, we will still make every attempt to meet your deadline. We know how important your deadlines can be and we want our clients to feel they can depend on us when the “chips are down” to help them meet those deadlines.

Working with the City's OPEB Staff

Generally speaking, Nyhart likes to relieve as much responsibility from our clients as possible. We do rely on the client to provide accurate census data, be prepared to discuss different actuarial assumptions (with our guidance) and to assist with other third party vendors (if needed).

Nyhart will interact with the City in the following areas:



Collection of Data and Documents

A formal data request will be prepared and discussed with the City's staff to clarify what is needed and in what format. It is our policy to allow clients to use whatever systems and programs they are comfortable with instead of forcing them to comply with our internal requirements.



Project Management

Key project deadlines will be discussed and agreed to early in the engagement. Our clients tell us when they want their results and it is our responsibility and job to adhere to those expectations.



Assumption Setting

The City will be expected to participate in the assumption setting process to help create modeling assumptions that are experience-based and appropriate for retiree health care purposes.

Our data request will include specific historical information that will help Nyhart develop appropriate assumptions.



Review of Preliminary Results

The City's staff will have the opportunity to review and discuss the preliminary GASB 45 / 75 results prior to finalizing the report.



Auditors

Outside auditors are welcome to ask questions or request documentation necessary for their due diligence.

Project planning is what Nyhart does best. In order to efficiently manage our more than 300 municipal clients, understanding what needs to be done and when is critical. For all of our healthcare projects, the project steps are very similar.

Briefly, the steps are described below:



Planning

Understanding what has been done in the past, what needs to be done now, and when it needs to be done is key to a successful project. Identify the players involved and assign appropriate tasks.

We are used to working with the client's staff and their other advisors (consultants, TPAs, lawyers, accountants).



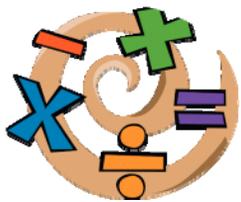
Data

The client is responsible for providing timely data to Nyhart. The data will be screened for errors and problems resolved.



Assumptions

All actuarial calculations involve projections of future outcomes so it is necessary to use reasonable assumptions. It is our policy to set assumptions based on actual experience to the extent it is creditable and explain why the assumptions were recommended.



Calculations

Nyhart will use Proval valuation software for the GASB 45/75 valuations. Proval is the leading actuarial valuation software because of its flexibility in handling complicated cases and transparency in its calculations.

For the healthcare relative values, Nyhart uses Windsor Actuarial Assistant, which is an actuarial and underwriting software program used for health plan designs and rate setting. The software is leased from Windsor Strategy Solutions.



Review Session

It is our practice to release actuarial products on a preliminary basis to give our clients the opportunity to review the results and then have a constructive discussion on the results and ask questions.

If necessary, data or assumption are changed based on feedback from the review session and the results updated.



Final Results

After all questions have been answered and the client approves the preliminary results, the final signed report is released.

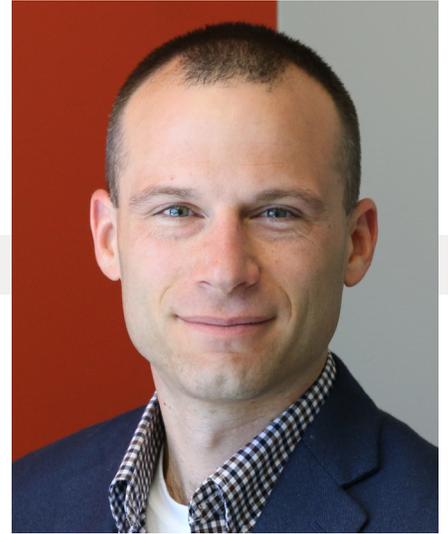
Professional Staff - Pension

Tayt V. Odom

FSA, FCA, MAAA, MBA

Account Manager / Relationship Manager

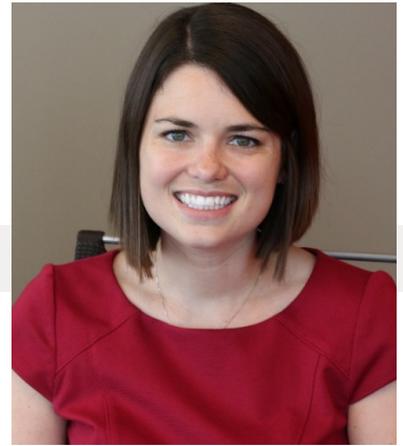
Tayt Odom is one of fourteen Principals of our company. He is also our National Accounts Management Practice Leader. Tayt will act as the Account Manager / Relationship Manager for the City of Gainesville, will oversee the overall client relationship, and will ensure that Nyhart is delivering exceptional consulting and value to the City.



Education	B.S. in Mathematics, University of Notre Dame M.B.A., University of California at Los Angeles
Corporate Role	<ul style="list-style-type: none">• Manages teams across all departments and responsible for ensuring that each line of business functions appropriately across multiple locations• Oversees overall operational staffing and talent management• Consults with clients concerning retirement issues including plan design and funding strategies
Current Work Assignments	<ul style="list-style-type: none">• Works with twenty actuarial clients• Manages Nyhart’s Consumer Driven Healthcare group• Leads all operational functions at Nyhart

Danielle Winegardner

ASA, EA, MAAA



Valuation Actuary

Danielle will work closely with Tayt and our actuarial analysts to provide the City with annual pension reporting and participate in the annual results meetings. She will also be involved in any administrative requests.

Danielle Winegardner has eight years of actuarial pension consulting experience. Danielle has a leadership role in Nyhart’s Defined Benefit practice, mentoring students and establishing best practices for valuation processes.

Danielle is the valuation actuary for six public-sector pension clients and ten private-sector clients. Danielle has been with Nyhart for three years. In that time, she has become an invaluable source for our clients.

Education	B.S in Mathematics and Economics, University of Dayton
Corporate Role	<ul style="list-style-type: none">• Performs accounting and funding valuations for private-sector and public pension plans• Benefits statements and benefit administration• Meeting attendance and presentation of results

Professional Staff - OPEB

Suraj Datta

ASA, MAAA, MBA



Project Manager / Consulting Actuary

Suraj will be the Project Manager for your OPEB team. As Project Manager, Suraj, Randy, Emily, and their team of analysts will manage the day-to-day operations of the engagement, which include activities such as project planning and execution, quality control, and on-time delivery of your results.

Suraj has been with Nyhart for six years.

Education	B.S. Mathematics and Statistics, Purdue University M.B.A. Finance, Ball State University
Corporate Role	<ul style="list-style-type: none"> • Actuary and Administration Consultant • Responsible for project execution and consulting
Healthcare Specialties	<ul style="list-style-type: none"> • Consulting on postretirement healthcare valuations • Development of actuarial modeling tools • Consulting on health plan rate setting and budget projection

Some of Suraj's Clients

City of Madison, WI	Peoria County IL
City of Sanford FL	City of Dover, DE
City of West Palm Beach FL	City of Fernandina Beach FL
Dane County WI	City of Burlington IA
City of Des Moines IA	Bradford County FL

Emily Clauss

ASA, MAAA



Actuary / Actuary Analyst

Another valuable member of the team will be Emily Clauss. She will be the Actuarial Analyst for the City. As Actuarial Analyst, Emily will have the responsibility of dealing with the data, inputting it, and running the first report for proofing.

Emily has been with Nyhart for three years and is working towards further actuarial credentials.

Education	B.A. Actuarial Science and Applied Statistics, Purdue University
Healthcare Specialties	<ul style="list-style-type: none">• Consulting on postretirement healthcare valuations• Development of actuarial modeling tools• Consulting on health plan rate setting and budget projections

Randy Gomez

FSA, FCA, MAAA



National Healthcare Practice Leader / Peer Review

Randy is the senior actuarial consultant in our health area and the National Healthcare Practice Leader. Randy has been with Nyhart for 22 years and provides a broad range of healthcare-related services to his clients. Randy consults on benefit issues such as plan design, cost modeling, post-retirement health, clinic evaluations, budget setting and funding adequacy.

Education	B.B.A. and M.A.S. in Actuarial Science, Georgia State University
Corporate Role	<ul style="list-style-type: none">• Principal• National Healthcare Practice Leader• Consults on key accounts, determines team policies and procedures, responsible for overall quality of services• Has over 33 years in the retirement business including 17 years with public- sector clients
Healthcare Specialties	<ul style="list-style-type: none">• Product development• Modeling of plan design and funding strategies• Long-term cost projections

Danielle Rae Winegardner

Personal Information

Danielle Rae Winegardner
 Nyhart
 8415 Allison Pointe Blvd.
 Suite 300
 Indianapolis, IN 46250-4201
 United States

Tel: +1 (317) 845-3537
 Email: danielle.winegardner@nyhart.com

Designations

ASA 2013
 MAAA 2014
 EA 2015

SOA Continuing Professional Development Requirement

Compliant (2016-2017)
 Compliant (2015-2016)
 Compliant (2014-2015)

Academic Degrees

B.S.

Other Professional Designations

Industry

Consulting

Primary Area of Practice

Retirement

Specializations

Private Sector - Pension
 Public Sector - Pension

Society of Actuaries Sections

Suraj M. Datta

Personal Information

Suraj M. Datta
 Nyhart
 8415 Allison Pointe Blvd.
 Suite 300
 Indianapolis, IN 46250-4201
 United States

Tel: (317) 845-3594
 Fax: (317) 845-3654
 Email: suraj.datta@nyhart.com

Designations

ASA 2015
 MAAA 2015

SOA Continuing Professional Development Requirement

Compliant (2015-2016)

Academic Degrees

B.S.
 M.B.A.

Other Professional Designations

Industry

Consulting

Primary Area of Practice

Health

Specializations

Employee Health Benefits
 Health Insurance - Commercial
 Other Post-employment Benefits

Society of Actuaries Sections

Health

Emily Clauss

Personal Information

Emily Clauss

Tel: +()
 Email:

Designations

ASA 2018

SOA Continuing Professional Development Requirement

Compliant (2016-2017)

Academic Degrees

Other Professional Designations

Industry

Primary Area of Practice

Specializations

Society of Actuaries Sections

Randy A Gomez

Personal Information

Randy A Gomez
 Nyhart
 8415 Allison Pointe Blvd
 Suite 300
 Indianapolis, IN 46250-4201
 United States

Tel: 1 (317) 845-3595
 Fax: 1 (317) 845-3654
 Email: randy.gomez@nyhart.com

Designations

MAAA 1990
 FSA 1991
 FCA 2014

SOA Continuing Professional Development Requirement

Compliant (2015-2016)
 Compliant (2016-2017)

Academic Degrees

B.B.A.
 M.A.S.

Other Professional Designations

Industry

Consulting

Primary Area of Practice

Health

Specializations

Employee Health Benefits
 Health Insurance - Commercial
 Public Sector - Pension
 Underwriting

Society of Actuaries Sections

Health
 International
 Modeling
 Reinsurance

References

Client	Contact	Service Provided
City of St. Petersburg P. O. Box 2842 St. Petersburg, FL 33731	Vicki Grant, CBP, PHR Manager, Benefits Division 727-893-7372 vicki.grant@stpete.org	Pension Actuarial (City, Firefighters, Police, Employees') OPEB Actuarial Since 2016
City of Daytona Beach P.O. Box 2451 Daytona Beach, FL 33115	Mark Eisner, Vice Chairman 386-383-8096 eisnerM@dbpd.fl.us	Pension Actuarial Police & Firefighters Since 1997
Pompano Beach Police and Firefighters Retirement System 2335 E. Atlantic Blvd., Suite 400 Pompano Beach, FL 33062	Debra Tocarchick Executive Director 954-782-4161 debbie@pbpfrs.org	Pension Actuarial Police & Firefighters Since 2012
City of Miami 1895 SW 3rd Avenue Miami, FL 33129	Dania Orta Pension Administrator 305-858-6006 dania@miamifipo.org	Pension Actuarial Police & Firefighters FIPO For Over 35 Years
City of Orlando 400 S. Orange Avenue Orlando, FL 32802	Ronald A. Glass 407-448-1027 GlassFF@aol.com	Pension Actuarial The City of Orlando Firefighters Since 2004
City of Fernandina Beach 204 Ash Street Fernandina Beach, FL 32034	Patti Clifford, Comptroller 904-310-3333 pclifford@fbfl.org	OPEB Actuarial Since 2012 Lost in Re-bidding in 2016 Regained in 2017
City of Port St. Lucie 121 SW Port St. Lucie Boulevard Port St. Lucie, FL 34984	Tom O'Reilly, CPA Assistant Finance Director / Treasurer 772-871-5008 toreilly@cityofpsl.com	OPEB Actuarial Since 2017
City of Sanford 300 N. Park Avenue Sanford, FL 32771	Cynthia M. Lindsay 407-688-5026 lindsay@sanfordfl.gov	OPEB Actuarial Since 2011
City of West Palm Beach 401 Clematis Street West Palm Beach, FL 33402	Bruce Cuningham 561-822-1330 bcuningham@wpb.org	OPEB Actuarial Since 2010

Data Security

Secure Website

Nyhart has a secure data transfer website (“ClientConnect”) for receiving and sending confidential personal information or HIPAA-protected data.

Nyhart ensures data confidentiality for your plan in two main ways:

1. First, we make sure when data is passed between you and Nyhart it is done in a secure way by the use of the secure data transfer part of our website (“ClientConnect”)
2. Secondly, we ensure the security of your data that is stored on Nyhart’s servers by the use of TDE (Transparent Data Encryption) so the databases cannot be copied and accessed from any external servers.

Nyhart was a healthcare TPA for over 50 years. We are well aware of the need for confidentiality in client data.

Please see the Appendix for a copy of our IT CyberSecurity policy.

Appendix

Required Forms

Drug-Free Workplace Form

Exhibit B - Certification of Compliance with Living Wage

Exhibit D – Living Wage Compliance

Exhibit E – Proposal Response Form – Signature Page

Addendum No. 1

Addendum No. 2

Sample Pension Valuation Report

Sample GASB 67 & 68 Valuation Report

Sample Management Summary

Sample Experience Report

Sample OPEB Valuation Report

Nyhart Innovations

IT CyberSecurity Plan

Votaire Sample Plan

DRUG-FREE WORKPLACE FORM

The undersigned vendor in accordance with Florida Statute 287.087 hereby certifies that

The Howard E. Nyhart Company, Incorporated does:
(Name of Business)

1. Publish a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the workplace and specifying the actions that will be taken against employees for violations of such prohibition.
2. Inform employees about the dangers of drug abuse in the workplace, the business's policy of maintaining a drug-free workplace, any available drug counseling, rehabilitation, and employee assistance programs, and the penalties that may be imposed upon employees for the drug abuse violations.
3. Give each employee engaged in providing the commodities or contractual services that are under bid a copy of the statement specified in subsection (1).
4. In the statement specified in subsection (1), notify the employees that, as a condition of working on the commodities or contractual services that are under bid, the employee will abide by the terms of the statement and will notify the employer of any conviction of, or plea of guilty or nolo contendere to, any violation of Chapter 893 or of any controlled substance law of the United States or any state, for a violation occurring in the workplace no later than five (5) days after such conviction.
5. Impose a sanction on, or require the satisfactory participation in a drug abuse assistance or rehabilitation program if such is available in the employee's community, by any employee who is so convicted.
6. Make a good faith effort to continue to maintain a drug-free workplace through implementation of this section.

As the person authorized to sign the statement, I certify that this firm complies fully with the above requirements.



Bidder's Signature
June 21, 2018

Date

CITY OF GAINESVILLE

CERTIFICATION OF COMPLIANCE WITH LIVING WAGE

The undersigned hereby agrees to comply with the terms of the Living Wage Ordinance and to pay all covered employees, as defined by City of Gainesville Ordinance 020663 as amended at 030168 (Living Wage Ordinance), during the time they are directly involved in providing covered services under the contract with the City of Gainesville for _____ a living wage of \$ _____ per hour to covered employees who receive Health Benefits from the undersigned employer and \$ _____ per hour to covered employees not offered health care benefits by the undersigned employer.

Name of Service Contractor/Subcontractor: The Howard E. Nyhart Company, Incorporated

Address: _____

Phone Number: _____

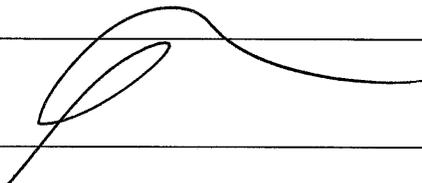
Name of Local Contact Person _____

Address: _____

Phone Number: _____

This form is not applicable.

\$ _____
(Amount of Contract)

Signature:  _____ Date: June 21, 2018

Printed Name: Thomas L. Totten

Title: Chief Executive Officer

LIVING WAGE COMPLIANCE

See Living Wage Decision Tree (Exhibit C hereto)

Check one:

- Living Wage Ordinance does not apply
(check all that apply)
- Not a covered service
 - Contract does not exceed \$100,000
 - Not a for-profit individual, business entity, corporation, partnership, limited liability company, joint venture, or similar business, who or which employees 50 or more persons, but not including employees of any subsidiaries, affiliates or parent businesses.
 - Located within the City of Gainesville enterprise zone.
- Living Wage Ordinance applies and the completed Certification of Compliance with Living Wage is included with this bid.

NOTE: If Contractor has stated Living Wage Ordinance does not apply and it is later determined Living Wage Ordinance does apply, Contractor will be required to comply with the provision of the City of Gainesville's living wage requirements, as applicable, without any adjustment to the bid price.

PROPOSAL RESPONSE FORM – SIGNATURE PAGE

(submit this form with your proposal)

TO: City of Gainesville, Florida
200 East University Avenue
Gainesville, Florida 32601

PROJECT: Actuarial Services for the City of Gainesville General Employees’ Pension
Plan and the City of Gainesville Retiree Health Insurance Trust Fund

RFP #: FPEN-180084-DH

RFP DUE DATE: June 25, 2018

Proposer’s Legal Name: The Howard E. Nyhart Company, Incorporated

Proposer’s Alias/DBA: The Nyhart Company / Nyhart

Proposer’s Address: 8415 Allison Pointe Boulevard, Suite 300
Indianapolis, IN 46250

PROPOSER’S REPRESENTATIVE (to be contacted for additional information on this proposal)

Name: Heath Merlak Telephone Number 618-307-5523 / 800-428-7106

Date: June 21, 2018 Fax Number 317-845-3654

Email address heath.merlak@nyhart.com

ADDENDA

The Proposer hereby acknowledges receipt of Addenda No.’s 1, 2, _____,
to these Specifications.

TAXES

The Proposer agrees that any applicable Federal, State and Local sales and use taxes, which are to be paid by City of Gainesville, are included in the stated bid prices. Since often the City of Gainesville is exempt from taxes for equipment, materials and services, it is the responsibility of the Contractor to determine whether sales taxes are applicable. The Contractor is liable for any applicable taxes which are not included in the stated bid prices.

LOCAL PREFERENCE (check one)

Local Preference requested: YES NO

A copy of your Business tax receipt and Zoning Compliance Permit should be submitted with your bid if a local preference is requested.

QUALIFIED LOCAL SMALL AND/OR DISABLED VETERAN BUSINESS STATUS (check one)

Is your business qualified as a Local Small Business in accordance with the City of Gainesville Small Business Procurement Program? (Refer to Definitions) YES NO

Is your business qualified as a Local Service-Disabled Veteran Business in accordance with the City of Gainesville Small and Service-Disabled Veteran Business Procurement Program? (Refer to Definitions) YES No

SERVICE-DISABLED VETERANS' BUSINESS (check one)

Is your business certified as a service-disabled veterans' business? YES NO

LIVING WAGE COMPLIANCE

See Living Wage Decision Tree (Exhibit C hereto)

Check One:

- Living Wage Ordinance does not apply (check all that apply)
 - Not a covered service
 - Contract does not exceed \$100,000
 - Not a for-profit individual, business entity, corporation, partnership, limited liability company, joint venture, or similar business, who or which employees 50 or more persons, but not including employees of any subsidiaries, affiliates or parent businesses.
 - Located within the City of Gainesville enterprise zone.
- Living Wage Ordinance applies and the completed Certification of Compliance with Living Wage is included with this bid.

NOTE: If Contractor has stated Living Wage Ordinance does not apply and it is later determined Living Wage Ordinance does apply, Contractor will be required to comply with the provision of the City of Gainesville's living wage requirements, as applicable, without any adjustment to the bid price.

SIGNATURE ACKNOWLEDGES THAT: (check one)

- Proposal is in full compliance with the Specifications.
- Proposal is in full compliance with specifications except as specifically stated and attached hereto.

Signature also acknowledges that Proposer has read the current City of Gainesville Debarment/Suspension/Termination Procedures and agrees that the provisions thereof shall apply to this RFP.

ATTEST:

Lisa Hague

Signature
By: Lisa Hague

Title: Chief Financial Officer

(CORPORATE SEAL)

PROPOSER:

Thomas L. Totten

Signature
By: Thomas L. Totten

Title: Chief Executive Officer



ADDENDUM NO. 1

Date: June 12, 2018

Bid Date: June 25, 2018
at 3:00 P.M. (Local Time)

Bid Name RFP for Actuarial Services for City of Gainesville
General Employees' Pension Plan and the City of Gainesville
Retiree Health Insurance Trust Fund

Bid No.: FPEN-180084-DH

NOTE: This Addendum has been issued only to the holders of record of the specifications.

The original Specifications remain in full force and effect except as revised by the following changes which shall take precedence over anything to the contrary:

1. Any questions shall be submitted in writing to the City of Gainesville Purchasing Division by 3:00 p.m. (local time), June 18, 2018. Questions may be submitted as follows:
Email: holderds@cityofgainesville.org
or
Faxed (352) 334-3163
Attention: Diane Holder
2. Please find attached:
 - a) Copy of the black out period information (Financial Procedures Manual Section 41-423 Prohibition of lobbying in procurement matters)) distributed during mandatory pre-bid meeting.
 - b) Exhibit A-October 1, 2016 Valuation Report-General Employees Retirement Plan
 - c) Exhibit B-2015 Retiree Health Fund Valuation Report final 7-28-16
 - d) Exhibit C-FY2017 General Employees' Pension GASB 67 Report
 - e) Exhibit D-FY2017 General Employees' Pension GASB 68 Report
 - f) Exhibit E-FY17 Retiree Health Insurance Fund GASB 45 and 74 Report Final

The following are answers/clarifications to questions received:

3. Question: Who is your current provide and can we get the latest copies of your valuation and GASB reports?
Answer: Conduent currently provides actuarial services for the City of Gainesville General Employees' Pension Plan and the Retiree Health Insurance Trust Fund. Requested Reports attached.
4. Question: Why are you going out to bid?
Answer: Original Agreement was with Xerox/Buck which was changed to Conduent in 2017. Now Conduent actuarial services business is being sold to H.I.G. Private Equity. Too many firm changes, and actuarial services team turnover.

5. Question: Are there any service issues with your current provider?
Answer: No
6. Question: What fees do you currently pay for the services covered by the RFP?
Answer:

General Employees' Pension Valuation Report	\$28,500
General Employees' Pension GASB 67 & 68	\$12,500
General Employees' Pension FL Chapter 112.664 Disclosure	\$5,500
General Employees' Pension Benefit Calculation Review	\$250
Retiree Health Fund Valuation Report/GASB 45	\$25,500
Retiree Health Fund GASB 74 & 75	\$5,500
7. Question: Can you provide the amount of the total fees paid to the current actuarial vendor in 2015, 2016 and 2017? Was the scope of that work the same as required in this RFP?
Answer: Most recent/current fees have been provided. Scope of work is the same as required in RFP.
8. Question: Please identify a current actuarial vendor. How long has the current actuarial vendor served the City in that capacity?
Answer: Prior to 2016, Actuarial Concepts was actuary for referenced City Plans for over 20 years. Through a 2016 RFP process, Xerox/Buck was hired as actuary. In 2017 Xerox/Buck became Conduent, who is current actuary.
9. Question: Is the current actuarial vendor allowed to bid on this assignment?
Answer: Yes.
10. Question: Has the City been totally satisfied with the current vendor?
Answer: Yes.
11. Question: Can you provide the copies of the most recent actuarial funding valuation report for Pension and OPEB plans and GASB disclosure reports (if prepared separately)?
Answer: Previously provided.
12. Question: Will any preference be given to the bidder maintaining an office in the State of Florida?
Answer: No.
13. Question: Is it mandatory that the successful bidder provides the similar services for public entities in the State of Florida?
Answer: Preferred.
14. Question: How many live meetings will be required under the terms of the engagement and must be included into the total fees?
Answer: 1
15. Question: Must our proposal cover all services listed in the RFP or will the City accept proposals only providing the requested GASB Reporting and Biannual Actuarial Valuation Reports Plan and the Retiree Health Insurance Trust Fund?
Answer: Proposals should cover all services listed in RFP.

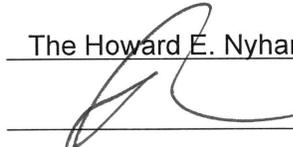
16. Question: Please provide the most recent Pension and OPEB actuarial reports and experience study
Answer: See Attachments, No recent Experience Studies are available.
17. Question: Were any plan changes made since the last valuation reports?
Answer: The assumed rate of return on investments was lowered from 8.10% in FY2016 to 8.0% in FY2017, and will be lowered to 7.9% in FY2018.
18. Question: Is the OPEB plan fully insured or self-insured?
Answer: Self-Insured.
19. Question: What is the budget for services being requested in this RFP?
Answer: The budget will be in line with previous fees paid for actuarial services, with adjustments made for fees quoted in the newly accepted proposal.
20. Question: How long has the current actuary been providing these services?
Answer: See question #8.
21. Question: Is the current actuary invited to bid on this RFP?
Answer: See #9
22. Question: Are you open to accepting mutually-agreeable contract terms, which include some limitation of liability on the work performed by the contracting actuarial firm? Also, are there any statutory requirements regarding limitation of liability of which we should be aware?
Answer: The City will negotiate contract terms with the firm whose proposal is accepted. Limitations of liability are negotiable. There are no statutory requirements regarding limitations of liability.
23. Question: How many full time employees does the municipality currently have?
Answer: See attached Actuarial Valuations
24. Question: How many retirees currently receiving healthcare benefits does the municipality have?
Answer: See attached Actuarial Valuations
25. Question: Are you self-insured or fully-insured?
Answer: Self-Insured
26. Question: Are there different types of plans (high-coverage, low-coverage, etc.) that retirees can choose from? Or is everyone covered by the same plan?
Answer: The City offers one plan for retirees. When a retiree reaches age 65 Medicare eligibility, they can choose to enroll in a Medicare Supplement sponsored by the employer and billed to the employer. The City's contribution can be applied to the Medicare Supplement and Part D option or the City's Health Plan.

27. Question: Does the plan provide just health insurance, or do you provide dental, vision, life insurance, or any other type?
Answer: Health Insurance only. There is a separate Group Life Insurance Policy for active employees that has a retiree classification. The retiree benefit reduces at retirement until it reaches a minimum benefit of \$5000.
28. Question: Are there any other post-retirement benefits that need to be included in the valuation?
Answer: No
29. Question: Will your valuation need to be broken out by different employee departments? If so, how many departments? (Note: this will most likely increase the cost of the valuation)
Answer: No
30. Question: Does the City have a trust fund which post employment benefits are paid?
Answer: Yes
31. Question: Subsidized post-employment life insurance is or not provided?
Answer: Employer paid Life Insurance is provided for active employees - at retirement, the benefit is gradually reduced to \$5000.
32. Question: Are there unit(s) for which costs and liabilities must be separately disclosed?
Answer: No
33. Question: Does the municipality value life insurance?
Answer: Employer paid Life Insurance program is not for of the Retiree health Insurance Trust Fund, and is not included in the actuarial valuation of that Fund.

ACKNOWLEDGMENT: Each Proposer shall acknowledge receipt of this Addendum No. 1 by his or her signature below, **and a copy of this Addendum to be returned with proposal.**

CERTIFICATION BY PROPOSER

The undersigned acknowledges receipt of this Addendum No. 1 and the Proposal submitted is in accordance with information, instructions, and stipulations set forth herein.

PROPOSER: The Howard E. Nyhart Company, Incorporated
BY: 
DATE: June 21, 2018

ADDENDUM NO. 2



Date: June 19, 2018

Bid Date: June 25, 2018
at 3:00 P.M. (Local Time)

Bid Name RFP for Actuarial Services for City of Gainesville
General Employees' Pension Plan and the City of Gainesville
Retiree Health Insurance Trust Fund

Bid No.: FPEN-180084-DH

NOTE: This Addendum has been issued only to the holders of record of the specifications.

The original Specifications remain in full force and effect except as revised by the following changes which shall take precedence over anything to the contrary:

1. The deadline for questions was June 18, 2018.
2. Please find attached:
 - a) Copy of the black out period information (Financial Procedures Manual Section 41-423 Prohibition of lobbying in procurement matters)) distributed during mandatory pre-bid meeting.

The following are answers/clarifications to questions received:

3. Question: Please provide the current contracted fees for each of the services outlined in the price proposal section of the RFP.
Answer: See Addendum No. 1.
4. Question: Please provide a copy of the most recent actuarial valuation reports for each of the services requested (i.e., funding, GASB, 112.664)?
Answer: See Addendum No. 1.
5. Question: For the Retiree Health Insurance Trust Fund, are the GASB 74/75 valuations prepared annually with updated census data and financial information or is the valuation bi-annual with a rollforward of results for interim years?
Answer: The valuation is done bi-annually with a roll forward of results for interim years.
6. Question: Are there any service issues with your current actuarial provider?
Answer: See Addendum No. 1.
7. Question: Are there any areas of concern that should be addressed in the proposal?
Answer: If there is going to be a fee to perform an initial reproduction of the most recent actuarial valuation, state so clearly.

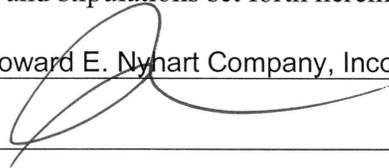
8. Question: Would the City entertain language that clarifies that the successful bidder may rely on the data provided by the City and is not responsible for data clean up or inaccurate data?
Answer: The City is willing to discuss such language with the successful bidder, but some data reconciliation is expected.
9. Question: Would the City entertain language that sets out a limitation of liability on asserted negligence or breach of contract, without limiting gross negligence or willful misconduct, to a mutually agreed amount?
Answer: The City is willing to discuss such language with the successful bidder.
10. Question: Would the City entertain language that clarifies that the indemnity is solely triggered when a claim from a non-party arises against the City that is due to the successful bidder's fault?
Answer: The City is willing to discuss such language with the successful bidder.
11. Question: Would the City entertain language clarifying that the insurance carried is slightly edited?
Answer: The City is willing discuss such language with the successful bidder.
12. Question: Would the City entertain a non-solicitation of employment clause that allows exceptions for non-targeted general job recruiting?
Answer: The City is willing to discuss such language with the successful bidder.
13. Question: Please confirm whether the RFP includes services the successful bidder is expected to perform related to pension plan benefit calculation and/or administration system(s) maintained and operated by the City.
Answer: The RFP specifies that the successful bidder is expected to perform pension benefit calculations, however there are no responsibilities related to the City's pension administration systems.
14. Question: Section 1 (C) Proposal Submission: This section asks that we submit the proposal on a CD or USB Flash Drive and that the electronic document should not be password protected or encrypted. It is Gallagher's policy to encrypt the CD or Flashdrive as a whole. Are we able to submit the flashdrive with a password included? Or can we submit an electronic copy via Sharefile or email?
Answer: The City will accept a flashdrive with the password included.
15. Question: How will addenda be communicated?
Answer: Addenda will be posted on Demandstar.
16. Question: Section III (A)(3) Format and Contents of Proposal – Price Proposal: Is the price proposal required to be submitted in a separate sealed envelope?
Answer: The price proposal is not required to be submitted in a separate sealed envelope.
17. Question: Section III (B) Qualifications/Statement of Qualifications: Is the City looking for a complete client list or just a listing of our references?
Answer: References are required. A representative list of public pension clients, including Florida public pension clients is preferred.

ACKNOWLEDGMENT: Each Proposer shall acknowledge receipt of this Addendum No. 2 by his or her signature below, **and a copy of this Addendum to be returned with proposal.**

CERTIFICATION BY PROPOSER

The undersigned acknowledges receipt of this Addendum No. 2 and the Proposal submitted is in accordance with information, instructions, and stipulations set forth herein.

PROPOSER: The Howard E. Nynart Company, Incorporated

BY: 

DATE: June 21, 2018

CITY OF _____ FINANCIAL SERVICES GAINESVILLE PROCEDURES MANUAL

41-423 Prohibition of lobbying in procurement matters

Except as expressly set forth in Resolution 060732, Section 10, during the black out period as defined herein no person may lobby, on behalf of a competing party in a particular procurement process, City Officials or employees except the purchasing division, the purchasing designated staff contact. Violation of this provision shall result in disqualification of the party on whose behalf the lobbying occurred.

Black out period means the period between the issue date which allows for immediate submittals to the City of Gainesville Purchasing Department for an invitation for bid or the request for proposal, or qualifications, or information, or the invitation to negotiate, as applicable, and the time the City Officials and Employee awards the contract.

Lobbying means when any natural person for compensation, seeks to influence the governmental decision making, to encourage the passage, defeat, or modification of any proposal, recommendation or decision by City Officials and Employees, except as authorized by procurement documents.



***Employees' Retirement System
of the
ABC City, Town, County***

*January 1, 2016
Actuarial Valuation Report*

Actuarial Certification	3
Executive Summary	5
Summary Results	5
Changes Since Prior Valuation and Key Notes	6
Assets and Liabilities	7
Present Value of Future Benefits	7
Funding Liabilities	8
Asset Information	9
Reconciliation of Gain/Loss	11
Contribution Requirements	12
Development of Recommended Contribution	12
Demographic Information	13
Member Reconciliation	15
System Provisions	17
Actuarial Assumptions	24
Other Measurements	28
Reconciliation of Unfunded Actuarial Liability	29
Market Value Reconciliation	30
Supplemental Benefit Payments Account	32
Transfer of Excess Investment Income	33
Detailed Demographic Information	34
Experience Review	40
Entry Age Accrued Liability (Detail)	42
Summary of Actuarial Accrued Liabilities and Percentage Covered by Net Assets Available for Benefits	43

At the request of the plan sponsor, this report summarizes Employees' Retirement System of the ABC City, Town, County as of January 1, 2016. The purpose of this report is to communicate the following results of the valuation:

- Funded Status; and
- Determine Recommended Contribution for the fiscal year January 1, 2017 through December 31, 2017.

This report has been prepared in accordance with the applicable Federal and State laws. Consequently, it may not be appropriate for other purposes. Please contact Nyhart prior to disclosing this report to any other party or relying on its content for any purpose other than that explained above. Failure to do so may result in misrepresentation or misinterpretation of this report.

The results in this report were prepared using information provided to us by other parties. The census information has been provided to us by the employer. Asset information has been provided to us by the trustee. We have reviewed the provided data for reasonableness when compared to prior information provided, but have not audited the data. Where relevant data may be missing, we have made assumptions we believe to be reasonable. We are not aware of any significant issues with and have relied on the data provided. Any errors in the data provided may result in a different result than those provided in this report. A summary of the data used in the valuation is included in this report.

The actuarial assumptions and methods were chosen by the Board. In our opinion, all actuarial assumptions and methods are individually reasonable and in combination represent our best estimate of anticipated experience of the plan. Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following:

- plan experience differing from that anticipated by the economic or demographic assumptions;
- changes in economic or demographic assumptions;
- increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period);
and
- changes in plan provisions or applicable law.

We did not perform an analysis of the potential range of future measurements due to the limited scope of our engagement. This report has been prepared in accordance with generally accepted actuarial principles and practice.

Neither Nyhart nor any of its employees have any relationship with the plan or its sponsor which could impair or appear to impair the objectivity of this report. To the extent that this report or any attachment concerns tax matters, it is not intended to be used and cannot be used by a taxpayer for the purpose of avoiding penalties that may be imposed by law.

The undersigned are compliant with the continuing education requirements of the Qualification Standards for Actuaries Issuing Statements of Actuarial Opinion in the United States and are available for any questions

Nyhart

David D. Harris, ASA, EA, MAAA
Enrolled Actuary No. 14-5609

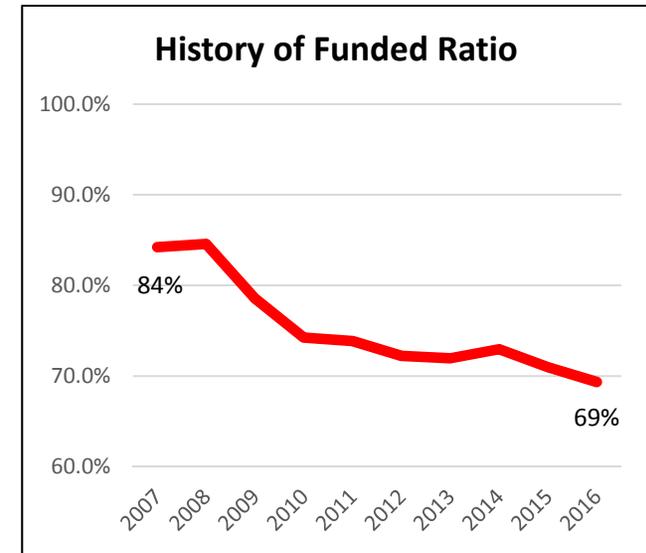
Heath Merlak, FSA, EA, MAAA
Enrolled Actuary No. 14-5967

May 11, 2016
Date

Summary Results

The actuarial valuation's primary purpose is to produce a scorecard measure displaying the funding progress of the plan toward the ultimate goal of paying benefits at retirement. The second liability is based on an entry age level percentage of pay.

	January 1, 2015	January 1, 2016
Funded Status Measures		
Accrued Liability	\$1,559,275,063	\$1,614,978,634
Actuarial Value of Assets	1,106,575,866	1,119,731,517
Unfunded Accrued Liability	\$452,699,197	\$495,247,117
Funded Percentage	71.0%	69.3%
Cost Measures		
Required Contribution	\$39,173,320	\$41,887,796
Required Contribution (as a percentage of payroll)	28.9%	30.4%
Asset Information		
Market Value of Assets	\$1,072,492,947	\$1,021,631,460
Actuarial Value of Assets	\$1,106,575,866	\$1,119,731,517
Actuarial Value / Market Value	103.2%	109.6%
Member Information		
Active Members	3,181	3,138
Terminated Vested Members	22	20
Retirees, Beneficiaries, and Disabled Members	3,181	3,257
DROP Participants	332	341
Total	6,716	6,756
Total Payroll	\$135,556,888	\$137,591,450



Changes since Prior Valuation and Key Notes

The following changes in system provisions have changed since the last valuation:

For those members with dates of hire on or after September 1, 2015:

- Service retirement eligibility is age 55 for public safety members or age 60 for non-public safety members with at least 10 years of service or 20 years of service regardless of age.
- Full retirement eligibility (3% of final average compensation for each year of creditable service) is age 50 for public safety members or age 55 for non-public safety members with at least 25 years of service.
- Early retirement benefits are reduced to an actuarial equivalent benefit.
- The normal form of benefit is a life annuity.
- Final average compensation is based on the average compensation during the highest 60 consecutive months of creditable service.
- The policy of rounding service up to the next highest quarter has been abolished.

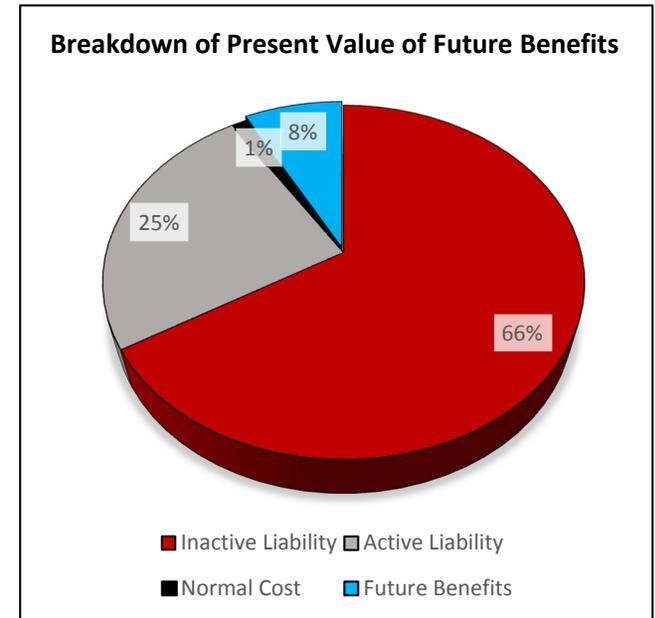
Leave accrual rates for new members hired on or after April 4, 2015 have been reduced. This may result in smaller leave balances being traded in for additional service upon their retirement.

There have been no changes to the assumptions since the last valuation date

Present Value of Future Benefits

The Present Value of Future Benefits represents the future benefits payable to the existing participants.

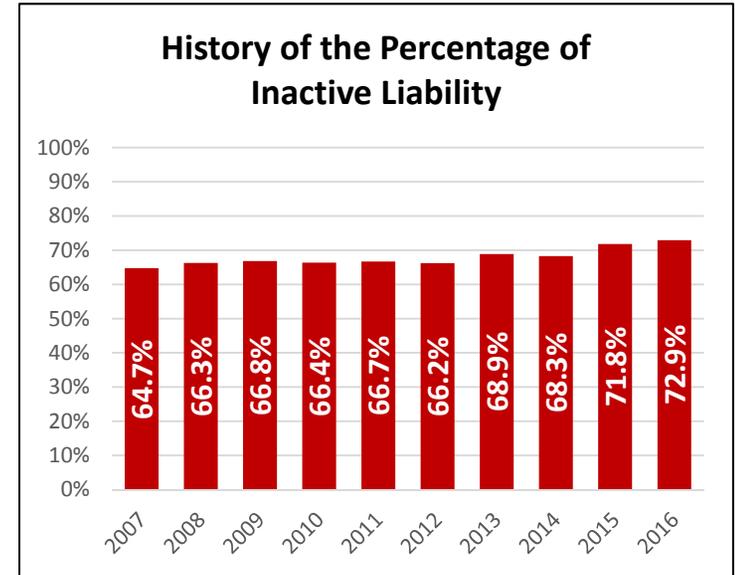
	January 1, 2016
Present Value of Future Benefits	
Active members	
Retirement	\$541,251,690
Disability	29,439,690
Death	8,495,579
Termination	17,785,017
Total active	\$596,971,976
Inactive members	
Retired members	\$693,555,330
DROP members	387,527,255
Beneficiaries	58,968,737
Disableds	29,285,979
Terminated vested members	8,283,666
Total inactive	\$1,177,620,967
Total	\$1,774,592,943
 Present value of future salaries	 \$970,204,430



Entry Age Accrued Liability

The Funding Liability measures the present value of benefits earned as of the valuation date, using a specified set of actuarial assumptions.

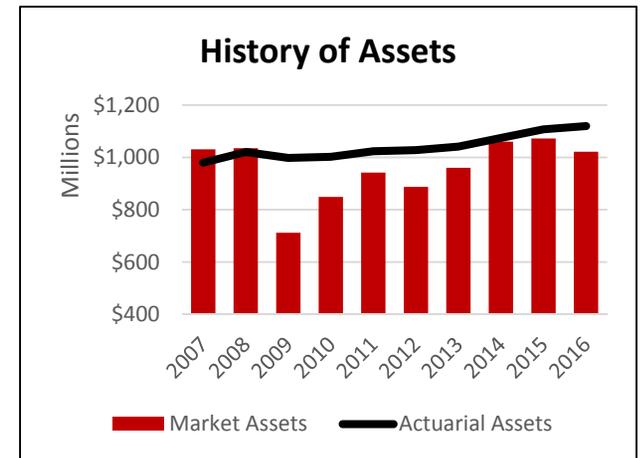
	January 1, 2016
Funding Liabilities	
Active members	
Retirement	\$405,647,236
Disability	17,580,287
Death	5,325,545
Termination	8,804,599
Total active	\$437,357,667
Inactive members	
Retired members	\$693,555,330
DROP members	387,527,255
Beneficiaries	58,968,737
Disableds	29,285,979
Terminated vested members	8,283,666
Total inactive	\$1,177,620,967
Total	\$1,614,978,634
 Normal Cost	 \$21,919,079



Asset Information

The amount of assets backing the pension promise is the most significant driver of volatility and future costs within a pension plan. The investment performance of the assets directly impacts the ultimate cost.

	January 1, 2016
Market Value Reconciliation	
Market value of assets - beginning of prior year	\$1,073,878,697
Contributions	
Employer contributions	\$40,354,154
Employee contributions	13,596,282
Non-employer contributing entity	<u>2,491,426</u>
Total	56,441,862
Investment income	(2,674,967)
Investment expenses	(6,933,916)
Benefit payments ⁽¹⁾	(96,206,645)
Administrative expenses	<u>(1,318,104)</u>
Market value of assets - beginning of current year	\$1,023,186,927
Return on Market Value	-0.9%
Reserve assets ⁽²⁾	\$1,555,467
Market Value of assets available for pension benefits	\$1,021,631,460
 Actuarial value of assets	
Value at beginning of current year	\$1,119,731,517



⁽¹⁾ Includes benefit payments, contribution refunds, supplemental benefit payments, and DROP distributions

⁽²⁾ SBP account

Asset Information (continued)

Actuarial Value of Assets is used to develop funded percentages and contribution requirements.

	January 1, 2016
1. Expected actuarial value of assets	
(a) Actuarial value of assets, beginning of prior year	\$1,106,575,866
(b) Contributions	56,441,862
(c) Benefit payments	(96,206,645)
(d) Expenses	(1,318,104)
(e) Expected return	78,763,552
(f) Expected actuarial value of assets – end of year	\$1,144,256,531
2. Market value of assets – beginning of current year	\$1,021,631,460
3. Amount subject of phase in	(\$122,625,071)
4. Phase in of gain/(loss) (20% x (\$122,625,071))	(\$24,525,014)
5. Transfer of excess investment return	\$0
6. Preliminary actuarial value of assets, beginning of current year ((1f)+(4)+(5))	\$1,119,731,517
7. 80% Market value of assets	\$817,305,168
8. 120% Market value of assets	\$1,225,957,752
9. Adjusted actuarial value of assets	\$1,119,731,517
10. Final actuarial value of assets	\$1,119,731,517
11. Return on actuarial value of assets	5.0%

Reconciliation of Gain/Loss

January 1, 2016

Liability (gain)/loss

Actuarial liability, beginning of prior year	\$1,559,275,063
Normal cost	21,575,938
Benefit payments	(96,206,645)
Interest	111,185,225
Plan provision changes	<u>(248,311)</u>
Expected actuarial liability, beginning of current year	\$1,595,581,270
Actual actuarial liability	\$1,614,978,634
Liability (gain)/loss	\$19,397,364

Asset (gain)/loss

Actuarial value of assets, beginning of prior year	\$1,106,575,866
Contributions	56,441,862
Benefit payments and expenses	(97,524,749)
Expected investment return	<u>78,763,552</u>
Expected actuarial value of assets, beginning of current year	\$1,144,256,531
Actual actuarial value of assets, beginning of current year	\$1,119,731,517
Asset (gain)/loss	\$24,525,014

Total (gain)/loss

\$43,922,378

Development of Recommended Contribution

The minimum recommended contribution is the annual amount necessary to fund the plan according to funding policies and/or applicable laws. The recommended contribution is composed of the normal cost, administrative expenses, plus an amortization charge.

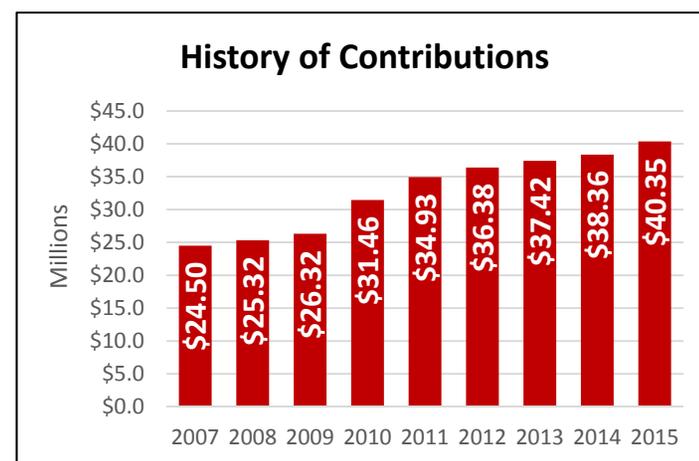
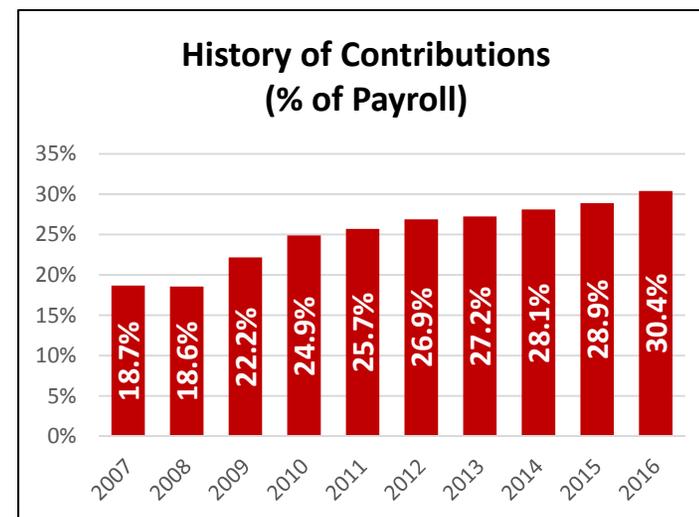
January 1, 2016

Funded Position

1.	Entry age accrued liability	\$1,614,978,634
2.	Actuarial value of assets	\$1,119,731,517
3.	Unfunded actuarial accrued liability (UAAL)	\$495,247,117

Employer Contributions

1.	Normal Cost	
	(a) Total normal cost	\$21,919,079
	(b) Expected member contributions	12,788,284
	(c) Net normal cost	\$9,130,795
2.	Administrative expenses	1,318,104
3.	Amortization of UAAL	29,998,338
4.	Applicable interest	1,440,559
5.	Total recommended contribution	\$41,887,796
	As a percentage of payroll	30.4%



The foundation of a reliable actuarial report is the member information provided by the plan sponsor. Monitoring trends in demographic information is crucial for long-term pension planning.

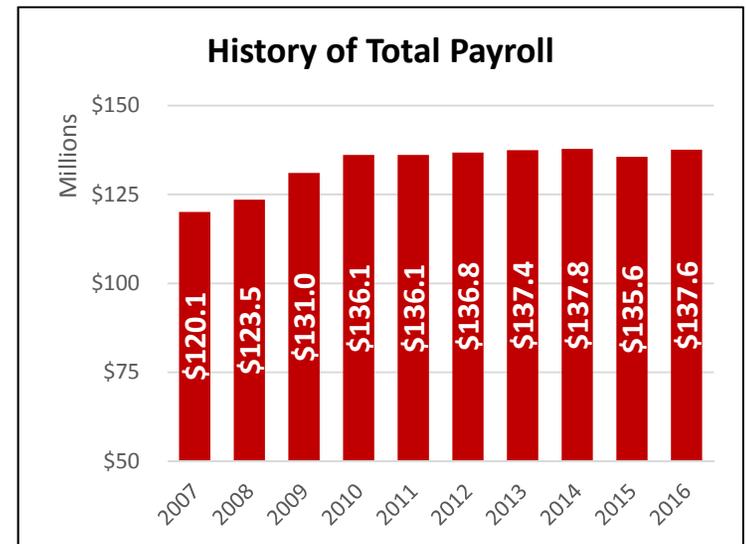
January 1, 2016

Member Counts

Active members	3,138
Retired members	2,401
Beneficiaries	654
Disabled members	202
Terminated vested members	20
DROP members	341
Total members	6,756

Active Members Demographics

Average age	43.4
Average service	8.8
Average compensation	\$43,847
Covered payroll	\$134,613,512
Total payroll	\$137,591,450



Demographic Information (continued)

	January 1, 2016
Retiree Statistics	
Average age	67.9
Average monthly benefit	\$2,272
Beneficiary Statistics	
Average age	70.7
Average monthly benefit	\$862
Disabled Members Statistics	
Average age	62.6
Average monthly benefit	\$1,301
Terminated Members Statistics	
Average age	54.6
Average monthly benefit	\$998
DROP Members Statistics	
Average age	57.7
Average monthly benefit	\$3,734

	Active	Terminated Vested	Disabled	Retired	Beneficiaries	DROP	Totals
Prior Year	3,181	22	204	2,338	639	332	6,716
Active							
To Terminated Vested							
To Disabled	(4)		4				
To Retired	(28)			28			
To DROP	(107)					107	
To Terminated Non-Vested	(130)						(130)
To Lump Sum Cash-Out	(137)						(137)
To Death	(2)						(2)
Terminated Vested							
To Retired		(2)		2			
Disabled							
To Death			(8)				(8)
Retired							
To Lump Sum Cash-Out							
To Death				(71)			(71)
Survivor							
To Lump Sum Cash-Out					(3)		(3)
To Death					(26)		(26)
DROP							
To Retired				94		(94)	
To Lump Sum Cash-Out						(3)	(3)
To Death						(1)	(1)
Additions	365		2	10	44		421
Departures							
Current Year	3,138	20	202	2,401	654	341	6,756

Active Member Schedule

Active member information grouped based on age and service.

Age Group	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 & up	Total	Average Pay
Under 25	59	56									115	31,100
25 to 29	87	223	57	1							368	34,879
30 to 34	45	166	166	58							435	40,940
35 to 39	38	105	117	104	46	2					412	47,006
40 to 44	35	82	91	70	104	36					418	48,841
45 to 49	24	67	69	72	75	82	12				401	49,988
50 to 54	22	59	69	70	64	68	14				366	45,202
55 to 59	23	61	90	50	47	55	11	1			338	41,936
60 to 64	13	42	52	24	27	30	2				190	45,779
65 to 69	6	16	17	9	12	8	2			1	71	45,096
70 & up		5	9	5	3	2					24	38,565
Total	352	882	737	463	378	283	41	1		1	3,138	43,847

Plan Effective Date

This plan was effective December 31, 1953 and was most recently amended effective August 12, 2015

Fiscal Year

Calendar year

Authority for Provisions

The plan is established and amended by the ABC City, Town, County acting through its Board of Trustees.

Eligibility for Membership

Any regular employee of the ABC City, Town, County, excluding Police employees who elected to transfer into Municipal Police Employees' Retirement System of ABC City, Town, County (MPERS) as of February 26, 2000 and Police employees hired after that date. Part-time council members with service prior to January 1, 1997, retroactive to December 31, 1976.

Accrued Benefit

For members whose date of hire is prior to September 1, 2015

Creditable Service not yet 25 years: 2.5% of Final Average Compensation for each year of Creditable Service

Creditable Service at least 25 years: 3.0% of Final Average Compensation for each year of Creditable Service

For public safety members whose date of hire is on or after September 1, 2015

Creditable Service not yet 25 years nor age 50: 2.5% of Final Average Compensation for each year of Creditable Service

Creditable Service at least 25 years and at least age 50: 3.0% of Final Average Compensation for each year of Creditable Service

For non-public safety members whose date of hire is on or after September 1, 2015

Creditable Service not yet 25 years nor age 55: 2.5% of Final Average Compensation for each year of Creditable Service

Creditable Service at least 25 years and at least age 55: 3.0% of Final Average Compensation for each year of Creditable Service

Maximum of 90% of Final Average Compensation

Benefits

Normal Retirement

Eligibility	For members whose date of hire is prior to September 1, 2015: Age 55 with 10 years of service, or 20 years of service regardless of age For public safety members whose date of hire is on or after September 1, 2015: Age 55 with 10 years of service; or 20 years of service regardless of age For non-public safety members whose date of hire is on or after September 1, 2015: Age 60 with 10 years of service; or 20 years of service regardless of age
Benefit	2.5% of Final Average Compensation for each year of Creditable Service
Eligibility	For members whose date of hire is prior to September 1, 2015: 25 years of service regardless of age For public safety members whose date of hire is on or after September 1, 2015: Age 50 with 25 years of service For non-public safety members whose date of hire is on or after September 1, 2015: Age 55 with 25 years of service
Benefit	3.0% of Final Average Compensation for each year of Creditable Service (Maximum of 90% of Final Average Compensation)

Early Retirement

For members whose date of hire is prior to September 1, 2015

Eligibility	Less than 25 years of Creditable Service and prior to age 55
Benefit	Benefits are reduced by 3%/year prior to age 55

For public safety members whose date of hire is on or after September 1, 2015

Eligibility	Less than 25 years of Creditable Service and prior to age 50
Benefit	Benefits are reduced to an actuarial equivalent benefits

For public non-safety members whose date of hire is on or after September 1, 2015

Eligibility	Less than 25 years of Creditable Service and prior to age 55
Benefit	Benefits are reduced to an actuarial equivalent benefits

Termination

Eligibility Member terminates employment, but does not retire

Benefit Accumulated contributions without interest

Eligibility Member terminates employment with at least 10 years of Creditable Service, but does not retire

Benefit Benefits, based on Creditable Service and Final Average Compensation at termination date, deferred to age 55. If Member contributions are withdrawn, benefit is forfeited.

Death

Eligibility Member eligible for retirement

Benefit (1) Surviving spouse may elect Option 2 benefits (including 100% Joint & Survivor actuarially equivalent to 50% Joint & Survivor, without reduction for early commencement) or a refund of the Member's contributions

Eligibility Member not eligible for retirement

Benefit (2) Surviving spouse may elect a monthly benefit of \$600 payable until remarriage, or a refund of the Member's contributions

Eligibility Eligible children under age 18

Benefit (3) Monthly benefit of \$150 per child (maximum \$300), payable until age 18. These benefits are in addition to any benefits payable under (1) or (2).

Eligibility Member died prior to May 24, 1989

Benefit (4) Monthly benefit to surviving spouse of \$600

Eligibility No benefits are payable under (1), (2), (3) or (4)

Benefit \$150 monthly benefit to unmarried dependent parent until death or remarriage

Disability

Eligibility	Ordinary Disability after 10 or more years of Creditable Service
Benefit	2.5% of Final Average Compensation times Creditable Service, with a minimum benefit of 50% of Final Average Compensation
 Eligibility	 Service Connected Disability
Benefit	50% of Final Average Compensation, plus 1.5% of Final Average Compensation times Creditable Service in excess of 10 years, with a combined maximum benefit of 90% of Final Average Compensation

Final Average Compensation

For members whose date of hire is prior to September 1, 2015:
Average compensation during the highest 36 consecutive months of Creditable Service

For members whose date of hire is on or after September 1, 2015:
Average compensation during the highest 60 consecutive months of Creditable Service

Date of Hire

The most recent date of hire for an active member, inactive member, or vested nonmember, or the date of hire on which a service retiree's or a disability retiree's original pension calculation was based

Creditable Service

Service credited under Retirement System; military service (maximum of three years); additional military service as required under USERRA for which member contributions are received

Vesting

If a member terminates employment for any reason other than retirement, death, or disability, he/she will be entitled to receive a nonforfeitable (vested) interest in their Accrued Benefit depending on years of service as shown below.

<u>Years of Service</u>	<u>Percentage Vested</u>
Less than 10	0%
10 or more	100%

Contributions

Members: 8% of compensation. Effective January 1, 2002, member contribution is equal to Maximum Employer Contribution, if less than 8%. If the Maximum Employer Contribution rate is 17% or greater, the member contribution rate will be 50% of the Employer Contribution rate, but not more than 9.5%. The Maximum Employer Contribution rate is the larger of the City, Town, County rate and the Special rate.

Employer Contribution: Balance, actuarially determined. Maximum Employer Contribution: Employer Contribution plus adjusting percentages for pro rata allocation of obligations for transfer of members to plans maintained by the State or a political subdivision thereof.

MERS payments received for 2006 and later are reserved for future Supplemental Benefit Payments

Payment Forms

Normal Form For members whose date of hire is before September 1, 2015: Normal form is joint and 50% contingent survivor. For members whose date of hire is on or after September 1, 2015: Normal form is a life annuity. For members entitled to Service Retirement Benefits, actuarially equivalent to regular retirement allowance.

Optional Forms Option 1: Refund of excess of Member's contributions over aggregate benefits paid;
Option 2: 100% Joint & Survivor to designated contingent annuitant;
Option 3: Any other form approved by the Board

Retirement Benefit Adjustments

For Members who retired before December 31, 1989, or surviving spouses of such Members, who did not enter DROP, an annual payment of \$600 at July 1, 1992 plus \$30 for each year retired since then (excluding first year)

Supplemental Benefit Payments

To be funded from (i) 1/10 of the first 2%, and 1/20 of the remainder, of excess return on the actuarial value of assets, provided the aggregate experience from all sources is an actuarial gain; (ii) decreases in Retirement Benefit Adjustment payments under 1:269 since July, 2002; and (iii) MERS payments received for 2006 and later

Deferred Retirement Option Plan (DROP):

Duration	<p><u>For members whose date of hire is prior to September 1, 2015:</u> The lesser of 5 years, or 32 years minus Creditable Service at DROP entry</p> <p><u>For members whose date of hire is on or after September 1, 2015:</u> The lesser of 5 years; or 35 years minus Creditable Service at DROP entry; for those not eligible at 30 years of Creditable Service because of age: duration is the difference between (a) & (b) provided the difference is at least 2 years: (a) Earliest eligibility plus 5 years and (b) Election for DROP</p>
Eligibility	Prior to July 1, 1991, eligible to retire with an immediate service retirement allowance and between 25 and 30 years of Creditable Service
Benefit	<p>Service retirement allowances are paid into the Member's DROP account and credited with interest at the rate set by the Board of Trustees. No further Member or employer contributions are payable and no further benefits are accrued.</p> <p>Upon retirement and termination of DROP participation (or death), the Member (or beneficiary) may elect one of the following:</p> <ul style="list-style-type: none">(a) A lump sum of the DROP account balance;(b) A life annuity based on the DROP balance;(c) Any other method of payment approved by the Board of Trustees <p>Normal survival benefits payable to survivors of retirees are paid upon death of the Member while a DROP participant</p>
Eligibility	<p><u>For members whose date of hire is prior to September 1, 2015:</u> On and after July 1, 1991, eligible to retire with an immediate service retirement allowance and between 25 and 30 years of Creditable Service. On and after July 1, 2002, Member has at least ten (10) years of Creditable Service and has attained at least age 55, with DROP duration not greater than three (3) years.</p> <p><u>For non-public safety members whose date of hire is on or after September 1, 2015:</u> On and after July 1, 1991, eligible to retire at age 55 with an immediate service retirement allowance and between 25 and 33 years of Creditable Service. On and after July 1, 2002, Member has at least ten (10) years of Creditable Service and has attained at least age 60, with DROP duration not greater than three (3) years.</p> <p><u>For non-public safety members whose date of hire is on or after September 1, 2015:</u> On and after July 1, 1991, eligible to retire at age 50 with an immediate service retirement allowance and between 25 and 33 years of Creditable Service. On and after July 1, 2002, Member has at least ten (10) years of Creditable Service and has attained at least age 55, with DROP duration not greater than three (3) years.</p>
Benefit	Comparable to pre-July 1, 1991 provisions, except interest is not credited to DROP account until the conditions of DROP participation have been satisfied. If the Member does not terminate employment at the end of the DROP period, potential interest credits are forfeited.

Compensated Absences

- Eligibility Upon written consent of the Member or his surviving spouse, the Retirement System will provide the following with respect to unused, accumulated vacation time and sick leave.
- Benefit (a) Cash payment for a portion, with the remainder added to the Member's Creditable Service, on the basis of one (1) hour for each two (2) hours of unused time
(b) Conversion of all of the accumulated time to Creditable Service, on the basis of one (1) hour for each hour of unused accumulated time and sick leave

Any unused time converted to service credit is included in determining eligibility for retirement and benefits. For purposes of determining Final Average Compensation, compensation at the time of retirement or death is assumed to continue for the period of added service.

System Provisions Not Included

We are not aware of any system provisions not included in the valuation

Adjustments Made for Subsequent Events

We are not aware of any event following the measurement date and prior to the date of this report that would materially impact the results of this report

Changes Since Prior Report

For those members with dates of hire on or after September 1, 2015:

- Service retirement eligibility is age 55 for public safety members or age 60 for non-public safety members with at least 10 years of service or 20 years of service regardless of age.
- Full retirement eligibility (3% of final average compensation for each year of creditable service) is age 50 for public safety members or age 55 for non-public safety members with at least 25 years of service.
- Early retirement benefits are reduced to an actuarial equivalent benefit.
- The normal form of benefit is a life annuity.
- Final average compensation is based on the average compensation during the highest 60 consecutive months of creditable service.
- The policy of rounding service up to the next highest quarter has been abolished.

Valuation Date January 1, 2016

Participation and Asset Information Collected as of January 1, 2016

Investment Return 7.25% per year, compounded annually, net of investment expenses

Inflation 2.75% per year

Annual Pay Increases Inflation, plus

<u>Age</u>	<u>ABC/Regular</u> %	<u>Fire/Police</u> %
30	2.50	4.00
35	1.50	2.00
40	1.25	2.00
45	.75	1.00
50	.50	0
55	0	0

Aggregate Payroll Growth 2.50% per year

Mortality RP-2000 Healthy Combined Blue Collar Projected with Scale BB to 2019, producing following specimen rates:

<u>Age</u>	<u>Male</u> %	<u>Female</u> %
20	.0326	.0180
30	.0686	.0277
40	.1295	.0829
50	.2278	.1854
60	.7237	.4089
70	2.0079	1.4815

Disabled Mortality RP-2000 Disabled Mortality Projected with Scale BB to 2019

Withdrawal Rates

<u>Age</u>	<u>Turnover</u>
20	.079
25	.077
30	.072
35	.063
40	.052
45	.040
50	.026
55	.009
60	.001

Probabilities of turnover are in accordance with the Eleventh Actuarial Valuation of the Railroad Retirement System based on Table T-5. The turnover rates are modified as follows, based on years of employment:

<u>Years of Service</u>	<u>ABC/Regular</u>	<u>Fire/Police</u>
	<u>%</u>	<u>%</u>
0-1	400	110
2	270	85
3	220	45
4-10	180	45
11-15	70	25
16+	50	15

Retirement Rates

	Before 25 Years of creditable service	After 25 Years of creditable service	
<u>Age</u>	<u>Retirement</u>	<u>Service</u>	<u>Retirement</u>
55-60	10%	25	20%
61-63	20%	26	30%
64	25%	27	40%
65+	100%	28+	100%

Assumed Transfers to Retirement System (for accumulated vacation and sick leave, e.g.) (only for members hired on or before April 4, 2015)

	<u>Total</u>
ABC	1.00 year
Regular	1.00 year
Fire	1.75 years
Police	1.50 years

Disability Rates

<u>Age</u>	<u>Disability</u>
20	.0006
25	.0006
30	.0006
35	.0007
40	.0011
45	.0022
50	.0046
55	.0102
60	.0320
61	.0355
62	.0400
63	.0450
64	.0410
65	.0195

Probabilities of disability are in accordance with the Eleventh Actuarial Valuation of the Railroad Retirement System. The disability rates for all members are increased by 100%.

Type of Disability

A percentage of disabilities is assumed to be ordinary disabilities, as shown below:

ABC, Regular	25% service-connected, 75% ordinary
Fire	50% service-connected, 50% ordinary
Police	75% service-connected, 25% ordinary

Actuarial Value of Assets

Market Value as of January 1, 1996. Beginning January 1, 1997, adjusted Market Value with 20% of unrealized gains (or losses) recognized each year. Beginning January 1, 2002, Expected Value Method, with 20% of investment gains (or losses) recognized each year.

Actuarial Cost Method

Entry Age Normal. This method produces a normal cost as a level percentage of pay over the service life of each participant and amortization of the Unfunded Actuarial Accrued Liability (UAAL). Gains and losses are reflected in the UAAL and are included in its amortization.

Starting January 1, 2015, the UAAL is amortized over a 30-year period using an annual total payroll growth assumption. The period will be reduced in successive years until reaching a 15-year open period.

Percent Married

80% of employees are assumed married with males three years older than their female spouses.

Administrative Expense Load

The actual amount of the prior year's expense is added to the normal cost.

Withdrawal of Employee Contributions

100% of employees who terminate (other than retirement, death, or disability) are assumed to withdraw their contributions.

Other

The liability for Retirement Benefit Adjustments and the funding of the Supplemental Benefit Payments from decreases in the Retirement Benefit Adjustments is combined into a perpetuity

Sources of Data

Membership and asset data as of January 1, 2016 was furnished by Retirement Office staff.

Changes Since Prior Valuation

Members hired on or after April 4, 2015 are not assumed to transfer accumulated vacation and sick leave for additional service.

The actuarial report also shows the necessary items required for plan reporting and the any state requirements.

- ✓ Reconciliation of unfunded actuarial liability
- ✓ Statement of changes on value of assets
- ✓ Distribution of assets
- ✓ Supplemental benefit payments account
- ✓ Transfer of excess investment income
- ✓ Active member schedule by division
- ✓ Membership data detail
- ✓ Experience review
- ✓ Analysis of financial experience
- ✓ Accrued liability detail
- ✓ Summary of actuarial accrued liabilities and percentage covered by net assets available for benefits

Reconciliation of Unfunded Actuarial Liability

	January 1, 2016
1. Unfunded actuarial accrued liability, beginning of prior year	\$452,699,197
2. Normal cost	21,575,938
3. Expenses	1,318,104
4. Employer contributions	(40,354,154)
5. Non-employer contributions	(16,087,708)
6. Interest	32,421,673
7. Expected unfunded actuarial accrued liability	\$451,573,050
8. Liability changes due to:	
(a) Amendments	(248,311)
(b) Assumptions	0
(c) Funding methods	0
(d) (Gain)/Loss	43,922,378
(e) Total	\$43,674,067
9. Unfunded actuarial liability beginning of current year	\$495,247,117

Statement of Changes on Value of Assets	December 31, 2014	December 31, 2015
Additions		
Contributions:		
Employer	\$38,356,684	\$40,354,154
Member	14,907,221	15,054,222
Nonemployer contributing entity	1,006,487	1,033,486
Total contributions	\$54,270,392	\$56,441,862
Investment income		
Net increase in fair value of investments	\$57,188,273	\$(3,043,423)
Interest and dividends	231,187	368,456
Less investment expense, other than from securities lending	(6,888,351)	(6,933,916)
Net income other than from securities lending	\$50,531,109	\$(9,608,883)
Securities lending income	0	0
Less securities lending expense	0	0
Net income from securities lending	\$0	\$0
Net investment income	\$50,531,109	\$(9,608,883)
Other	(92,611)	(140,371)
Total additions	\$104,708,890	\$46,692,608
Deductions		
Benefit payments, including refunds of member contributions	\$90,949,249	\$96,206,645
Administrative expense	1,388,242	1,318,104
Other	0	0
Total deductions	\$92,337,491	\$97,524,749
Net increase in market value	\$12,371,319	\$(50,832,141)
Market Value as of		
Beginning of year	\$1,060,092,202	\$1,072,463,601
End of year	\$1,072,463,601	\$1,021,631,460

**Employees' Retirement System of the ABC City, Town, County
Actuarial Valuation as of January 1, 2016**

	Other Measurements	
	December 31, 2014	December 31, 2015
Distribution of Assets		
Cash and deposits	\$17,428,674	\$16,264,555
Securities lending cash collateral	0	0
Total cash	\$17,428,674	\$16,264,555
Receivables:		
Contributions	\$6,458,736	\$3,921,563
Due from broker for investments sold	2,794,739	3,645,416
Investment income	14,708	5,704
Other	131,914	138,862
Total receivables	9,400,097	\$7,711,545
Investments:		
Fixed Income – Domestic	\$288,853,105	\$272,017,206
Fixed Income – International	\$21,687,936	24,610,440
Equities – Domestic	332,008,221	300,457,696
Equities – International	285,677,144	264,259,383
Real Estate	57,892,372	64,441,591
Alternative Investments	63,224,976	75,144,336
Properties at cost	571,724	565,317
Total investments	\$1,049,915,478	\$1,001,495,969
Total assets	\$1,076,744,249	\$1,025,472,069
Liabilities		
Payables		
Investment management fees	\$971,728	\$1,028,667
Due to broker for investments purchased	1,893,824	1,256,475
Collateral payable for securities lending	0	0
Other	0	0
Total liabilities	\$2,865,552	\$2,285,142
Total	\$1,073,878,697	\$1,023,186,927
Reserved Assets		
Supplemental Benefit Payments Account	\$(1,415,096)	\$(1,555,467)
Assets available for benefits	\$1,072,463,601	\$1,021,631,460

Supplemental Benefit Payments Account

1. RBA payments in 2002	\$783,450		
2. Accumulation of SBP account			
a. Year	<u>2013</u>	<u>2014</u>	<u>2015</u>
b. Valuation interest rate	7.50%	7.50%	7.25%
c. Balance at beginning of year	1,247,763	1,322,485	1,415,096
d. Interest on balance	93,582	99,186	102,594
e. RBA payments in year	548,490	518,160	471,570
f. Addition to SBP account (1-2 (e))	234,960	265,290	311,880
g. MERS Contribution for previous year			
i. Date received	6/3/2013	6/16/2014	6/26/2015
ii. Amount	939,361	973,406	1,005,503
iii. Days	212	199	189
h. Interest on g(ii)	40,920	39,803	37,748
i. MERS contribution for current year			
i. Date received	6/16/2014	6/26/2015	--/--/2016
ii. Amount	973,406	1,005,503	1,033,486
j. Distributions from SBP account			
i. Date of distributions	9/16/2013	9/15/2014	9/15/2015
ii. Amount	1,240,864	1,288,575	1,317,083
iii. Days	107	108	108
k. Interest on j(ii)	<u>27,282</u>	<u>28,596</u>	<u>28,254</u>
l. Balance at end of year (c+d+f+h+i(ii)-j(ii)-k)	1,322,485	1,415,096	1,555,467
m. Transfer of excess investment income ¹	<u>0</u>	<u>0</u>	<u>0</u>
n. Final balance at end of year	1,322,485	1,415,096	1,555,467

*1/10 of first 2% and 1/20 of additional excess returns

Transfer of Excess Investment Income

1. Actuarial value of assets as of 01/01/2015	\$1,106,575,866
2. Contributions from employer, members, other	56,441,862
3. Benefits, refunds, and administrative expense	(97,524,749)
4. Theoretical actuarial value of assets without return at 12/31/2015 (1.+ 2. + 3.)	\$1,065,492,979
5. Average actuarial value of assets during 2015 (1. + 4.)/2	\$1,086,034,423
6. Expected return at 7.25%	78,763,552
7. Actual return	54,238,538
8. Excess investment return	0
9. Excess Investment return transfer	
(a) 10% of first 2% (10% x \$0) =	0
(b) 5% of additional return (5% x \$0) =	0
(c) Total Preliminary excess return transfer	0
10. Experience gain/(loss) for 2015	\$(43,922,378)
11. Final excess investment return transfer (lesser of 9(c) and 10, but not less than zero)	\$0

Active Member Schedule

Active member information grouped based on age and service.

ABC

Age Group	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 & up	Total	Average Pay
Under 25	13	4									17	22,490
25 to 29	10	23	4								37	31,131
30 to 34	12	23	10	4							49	35,684
35 to 39	12	15	14	14	1						56	41,885
40 to 44	7	17	13	10	5	2					54	42,724
45 to 49	3	13	7	10	1	2	1				37	43,492
50 to 54	4	15	14	17	5						55	41,547
55 to 59	11	9	19	5	4	2	2				52	39,980
60 to 64	2	10	10	5	3						30	40,159
65 to 69	3	3	3	2							11	36,615
70 & up		1	5	2							8	34,323
Total	77	133	99	69	19	6	3				406	38,893

Active Member Schedule

Active member information grouped based on age and service.

GENERAL

Age Group	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 & up	Total	Average Pay
Under 25	33	23									56	29,485
25 to 29	64	147	25								236	33,190
30 to 34	29	113	114	11							267	38,615
35 to 39	26	78	83	47	16	1					251	43,531
40 to 44	28	63	70	47	60	10					278	43,822
45 to 49	21	54	59	54	54	46	8				296	45,587
50 to 54	18	44	55	52	53	51	11				284	42,811
55 to 59	12	52	71	45	43	49	7	1			280	41,565
60 to 64	11	32	41	19	23	29	2				157	46,043
65 to 69	3	13	14	7	12	8	2			1	60	46,650
70 & up		4	4	3	3	2					16	40,686
Total	245	623	536	285	264	196	30	1		1	2,181	41,665

Active Member Schedule

Active member information grouped based on age and service.

FIREFIGHTERS

Age Group	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 & up	Total	Average Pay
Under 25	13	29									42	36,737
25 to 29	13	53	28	1							95	40,533
30 to 34	4	30	42	43							119	48,320
35 to 39		12	20	43	27	1					103	58,049
40 to 44		2	8	13	32	19					74	68,540
45 to 49			3	8	20	29	3				63	72,793
50 to 54				1	5	14	2				22	77,534
55 to 59						3	1				4	81,147
60 to 64			1		1	1					3	88,142
65 to 69												
70 & up												
Total	30	126	102	109	85	67	6				525	55,382

Active Member Schedule

Active member information grouped based on age and service.

POLICE

Age Group	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 & up	Total	Average Pay
Under 25												
25 to 29												
30 to 34												
35 to 39					2						2	57,707
40 to 44					7	5					12	71,166
45 to 49						5					5	71,303
50 to 54					1	3	1				5	78,989
55 to 59						1	1				2	66,224
60 to 64												
65 to 69												
70 & up												
Total					10	14	2				26	71,281

Membership Data

1. Actives

	<u>Count</u>	<u>Average Salary</u>
		-\$-
ABC	406	38,893
Regular	2,181	41,665
Fire	525	55,382
Police	<u>26</u>	71,281
Total	3,138	43,847

2. Annuitants

	<u>Count</u>	<u>Average Annuity</u>
		-\$-
Retirees	2,401	27,268
Beneficiaries	654	10,341
Disabilities	202	15,609
DROP	<u>341</u>	44,804
Total	3,598	25,179

3. Inactive Members

	<u>Count</u>	<u>Average Deferred Annuity</u>
		-\$-
Deferred Vested	20	11,972

Retired and Terminated Members Data

	<u>Number</u>	<u>Benefits</u>
ABC		-\$-
DROP	14	297,333
Retired	142	3,204,615
Beneficiaries	27	191,339
Disabled	8	99,508
Vested Terminated	<u>2</u>	<u>23,577</u>
Subtotal	193	3,816,372
REGULAR		
DROP	241	9,353,441
Retired	1,602	38,979,723
Beneficiaries	376	3,720,564
Disabled	143	2,186,066
Vested Terminated	<u>15</u>	<u>148,683</u>
Subtotal	2,377	54,388,977
FIRE		
DROP	81	5,340,246
Retired	449	16,996,131
Beneficiaries	146	1,762,821
Disabled	27	541,516
Vested Terminated	<u>2</u>	<u>43,058</u>
Subtotal	705	24,683,772
POLICE		
DROP	5	286,510
Retired	208	6,290,132
Beneficiaries	105	1,088,505
Disabled	24	325,977
Vested Terminated	<u>1</u>	<u>24,129</u>
Subtotal	343	8,015,253
TOTAL		
DROP	341	15,278,030
Retired	2,401	65,470,602
Beneficiaries	654	6,763,228
Disabled	202	3,153,067
Vested Terminated	<u>20</u>	<u>239,447</u>
GRAND TOTAL	3,618	90,904,374

Experience Review

The following table quantifies the effects of each component of experience in 2015, based on the latest assumptions and method changes adopted by the Board as a result of the 2009-2013 Experience Study.

Table 1 - 2015 (Gain)/Loss Analysis

	<u>No. Active</u>	<u>Unfunded actuarial liability</u>	<u>Employer contribution</u>	
		-\$-	-\$-	-%-
2015 - Actual	3,181	452,699,197	39,173,320	28.90
2016 - Expected (for continuing members)	2,786	451,573,050	38,361,510	30.96
<u>Elements of Experience</u>				
Investment return		24,525,014	1,538,449	1.12
Salary increases		5,256,555	566,628	(0.19)
Retirements, DROP	(14)	10,489,140	657,982	0.53
Mortality	5	(3,173,491)	(199,072)	(0.16)
Disability	13	267,256	16,765	0.01
Turnover	(17)	1,411,162	88,522	0.07
New members	365	380,672	866,692	(1.92)
Data, other		<u>4,766,070</u>	<u>226,337</u>	<u>0.19</u>
Total	352	43,922,378	3,762,303	(0.35)
Assumption changes		0	0	0.00
Plan changes		<u>(248,311)</u>	<u>(236,017)</u>	<u>(0.17)</u>
2016 Actual	3,138	495,247,117	41,887,796	30.44

The expected 2016 components reflect a primary objective of the actuarial cost method, under which normal costs are a level percentage of payroll, and the January 1, 2016 unfunded liability is amortized over 29 years, increasing by 2.5% annually, while successive years amortization period will reduce until reaching a 15-year open period, if the aggregate experience of the Retirement System is the same as that predicted by the actuarial assumptions. This means that the expected 2016 Normal Cost is 6.9% of expected payroll, and the expected 2016 City, Town, County contribution is \$38,361,510.

Analysis of Financial Experience

Gains and losses in unfunded actuarial liability during years ended 2010 - 2015
resulting from differences between assumed experience and actual experience

\$ Gain or (Loss) for year

<u>Elements of Experience</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>	<u>2015</u>
Investment return	\$(20,396,885)	\$(35,231,052)	\$(20,304,794)	\$(3,486,533)	\$(8,520,730)	\$(24,525,014)
Salary increases	7,087,550	(623,723)	3,017,967	12,896,696	4,046,219	(5,256,555)
Retirements	26,986,427	15,933,989	3,351,339	(398,081)	(1,433,818)	(10,489,140)
Mortality	(9,830,807)	(14,988,684)	(3,643,276)	1,047,985	467,752	3,173,491
Disability	(570,786)	(10,597)	148,348	(698,808)	185,079	(267,256)
Turnover	(10,119,063)	1,878,566	571,654	(1,710,221)	1,375,127	(1,411,162)
New members	(1,461,549)	(1,671,178)	(2,204,660)	(1,417,682)	(570,624)	(380,672)
Contribution differences	3,620,538	5,303,016	N/A	N/A	N/A	N/A
Leaves, transfers, etc.	<u>(3,055,745)</u>	<u>702,493</u>	<u>3,124,006</u>	<u>0</u>	<u>(2,869,596)</u>	<u>(4,766,070)</u>
Gain or (loss) from Experience	(11,360,858)	(34,010,186)	(15,939,416)	6,233,356	(7,320,591)	(43,922,378)
Non recurring elements:						
Plan amendment	--	--	--	--	--	248,311
Assumption change	--	--	--	--	(47,540,972)	--
Actuarial method change						
Data (optional forms)	--	--	--	(12,509,006)	--	--
Valuation software	--	--	5,306,905	13,556,351	--	--
Composite gain/(loss) During year	<u>\$(11,360,858)</u>	<u>\$(34,010,186)</u>	<u>\$(10,632,511)</u>	<u>\$7,280,701</u>	<u>\$(54,861,563)</u>	<u>\$(43,674,067)</u>

Entry Age Accrued Liability (Detail)

	January 1, 2016
Funding liabilities	
Active members	
Retirement	\$405,647,236
Disability	17,333,755
Death	5,325,545
Termination	9,051,131
Total active	\$437,357,667
Inactive members	
Retired members	\$683,109,330
DROP (future benefits)	184,285,311
DROP (accounts)	203,241,944
Leave balances	6,277,801
Beneficiaries	58,968,737
RBA benefits	10,446,000
Disableds	29,285,979
Terminated vested members	2,005,865
Total inactive	\$1,177,620,967
Total	\$1,614,978,634

Summary of Actuarial Accrued Liabilities and Percentage Covered by Net Assets Available for Benefits

Valuation date	(1)	(2)	(3)	(4)	Net assets available for benefits	Percentage of actuarial liabilities covered by assets			
	Active members contributions*	Retirees and survivors**	Terminated vested members	Active members employer provided		(1)	(2)	(3)	(4)
	-\$-	-\$-	-\$-	-\$-	-\$-	-%-	-%-	-%-	-%-
01/01/06	185,590,714	592,961,470	2,777,542	329,752,003	926,869,870	100.0	100.0	100.0	44.1
01/01/07	196,143,559	629,048,416	3,398,410	334,584,762	1,031,031,076	100.0	100.0	100.0	60.5
01/01/08	212,407,644	660,297,629	3,229,816	330,713,124	1,035,391,227	100.0	100.0	100.0	48.2
01/01/09	235,554,734	689,274,354	3,719,456	341,556,008	711,989,579	100.0	69.1	0.0	0.0
01/01/10	256,663,672	720,761,899	4,156,485	368,492,011	848,628,273	100.0	82.1	0.0	0.0
01/01/11	267,075,592	742,436,557	4,396,791	371,813,179	941,863,350	100.0	90.9	0.0	0.0
01/01/12	270,043,946	762,106,926	4,255,920	386,811,384	887,029,701	100.0	81.0	0.0	0.0
01/01/13	270,204,544	788,868,802	3,909,968	383,826,148	960,010,682	100.0	87.4	0.0	0.0
01/01/14	271,758,390	831,113,713	2,267,254	366,837,917	1,060,092,202	100.0	94.9	0.0	0.0
01/01/15	284,306,327	932,088,088	2,236,906	340,643,742	1,072,492,947	100.0	84.6	0.0	0.0
01/01/16	306,319,701	966,095,357	2,005,865	340,557,711	1,021,631,460	100.0	74.0	0.0	0.0

* Including DROP accounts.

** Including DROP participants' future benefits.



City of XYZ Retirement System

September 30, 2017
GASB Nos. 67 & 68 Report

Actuarial Certification	3
Summary	5
Statement of Fiduciary Net Position	6
Statement of Changes in Fiduciary Net Position	7
Schedule of Changes in Net Pension Liability and Related Ratios	8
Pension Expense	9
Deferred Outflows of Resources and Deferred Inflows of Resources Related to Pensions	10
Rate of Return	12
Discount Rate and Net Pension Liability Sensitivity	13
Schedule of Contributions	14
Actuarial Assumptions for Total Pension Liability	15
Actuarial Assumptions for Actuarially Determined Contributions	17
Plan Provisions	20

This report is prepared in accordance with our understanding of GASB Nos. 67 & 68 for the purpose of disclosing pension plans in financial statements. Determinations for purposes other than meeting these requirements may be significantly different from the results contained in this report.

The information presented in this report is based on:

- the actuarial assumptions included in this report;
- the plan provisions;
- participant information furnished to us by the Plan Administrator;
- asset information furnished to us by the Plan Trustee.

We have reviewed the provided data for reasonableness when compared to prior information provided, but have not audited the data. Where relevant data may be missing, we may have made assumptions we believe are reasonable for the purpose of the measurement. We are not aware of any significant issues with and have relied on the data provided. Any errors in the data provided may result in a different result than those provided in this report.

The interest rate, other economic assumptions, and demographic assumptions have been selected by the plan sponsor with our recommendations. The assumptions used, in our opinion, are reasonable and represent a reasonable expectation of future experience under the plan. All calculations have been made in accordance with generally accepted actuarial principles and practice.

A summary of any assumptions not included in this report, the plan provisions and the participant information is included in the Actuarial Valuation Report for funding purposes.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following:

- plan experience differing from that anticipated by the economic or demographic assumptions;
- changes in economic or demographic assumptions;
- increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the plan's funded status); and
- changes in plan provisions or applicable law.

We did not perform an analysis of the potential range of future measurements due to the limited scope of our engagement.

The undersigned are compliant with the continuing education requirements of the Qualification Standards for Actuaries Issuing Statements of Actuarial Opinion in the United States.

To our knowledge there have been no significant events prior to the current year's measurement date or as of the date of this report which could materially affect the results contained herein.

Neither Nyhart nor any of its employees have any relationships with the plan or plan sponsor which could impair or appear to impair the objectivity of this report.

Nyhart

01/5/2018

David D. Harris, ASA, EA, MAAA

Heath W. Merlak, FSA, EA, MAAA

Net Pension Liability

The components of the net pension liability at September 30

	09/30/2017	09/30/2016
Total pension liability	\$ 2,363,545,975	\$ 2,222,547,481
Plan fiduciary net position	(1,732,531,766)	(1,700,098,500)
Net pension liability	\$ 631,014,209	\$ 522,448,981
Plan fiduciary net position as a percent of the total pension liability	73.30%	76.49%
Pension Expense for the Fiscal Year Ended September 30	\$ 190,253,533	\$ 65,213,734

Actuarial Assumptions

The total pension liability was determined using the following actuarial assumptions

Inflation	3.25%	3.25%
Salary increases, including inflation	3.25% - 9.75%	3.25%-9.75%
Investment rate of return, including inflation, and net of investment expense	7.50%	7.50%

Plan Membership

The total pension liability was determined based on the plan membership as of October 1

	2016	2015
Inactive plan members and beneficiaries currently receiving benefits	2,205	2,230
Inactive plan members entitled to but not yet receiving benefits	15	15
Active plan members	1,869	1,650
Total members	4,089	3,895

City of XYZ Retirement System
GASB Nos. 67 & 68 Report as of Fiscal Year Ending September 30, 2017
Statement of Fiduciary Net Position

Assets	<u>09/30/2017</u>	<u>09/30/2016</u>
Cash and deposits	\$ 43,119,707	\$ 61,321,445
Securities lending cash collateral	0	0
Total cash	<u>\$ 43,119,707</u>	<u>\$ 61,321,445</u>
Receivables:		
Contributions	\$ 0	\$ 0
Due from broker for investments sold	620,106	12,299,282
Investment income	3,220,395	3,304,949
Other	0	0
Total receivables	<u>\$ 3,840,501</u>	<u>\$ 15,604,231</u>
Investments:		
Domestic fixed income	\$ 454,746,081	\$ 442,916,111
Foreign fixed income	29,967,974	24,879,199
Domestic equities	352,425,748	366,888,111
International equities	259,622,074	204,203,058
Real estate	271,271,606	261,478,204
Private equity	139,235,059	138,484,218
Lending Cash Collateral	129,908,550	146,627,092
Mutual Funds - DROP	181,181,304	198,092,739
Total investments	<u>\$ 1,818,358,396</u>	<u>\$ 1,783,568,732</u>
Total assets	<u>\$ 1,865,318,604</u>	<u>\$ 1,860,494,408</u>
Liabilities		
Payables:		
Investment management fees	\$ 0	\$ 0
Due to broker for investments purchased	2,132,305	13,329,386
Collateral payable for securities lending	129,908,550	146,627,092
Other	745,983	439,430
Total liabilities	<u>\$ 132,786,838</u>	<u>\$ 160,395,908</u>
Net position restricted for pensions	<u>\$ 1,732,531,766</u>	<u>\$ 1,700,098,500</u>

City of XYZ Retirement System
GASB Nos. 67 & 68 Report as of Fiscal Year Ending September 30, 2017
Statement of Changes in Fiduciary Net Position

	09/30/2017	09/30/2016
Additions		
Contributions:		
Employer	\$ 53,264,009	\$ 48,672,615
Member	13,206,378	12,082,805
Nonemployer contributing entity	0	0
Total contributions	\$ 66,470,387	\$ 60,755,420
Investment income:		
Net increase in fair value of investments	\$ 127,248,340	\$ 111,458,267
Interest and dividends	27,697,541	26,363,540
Less investment expense, other than from securities lending	(5,052,640)	(5,697,087)
Net income other than from securities lending	\$ 149,893,241	\$ 132,124,720
Securities lending income	704,392	655,152
Less securities lending expense	(175,979)	(163,656)
Net income from securities lending	\$ 528,413	\$ 491,496
Net investment income	\$ 150,421,654	\$ 132,616,216
Other	335,109	330,611
Total additions	\$ 217,227,150	\$ 193,702,247
Deductions		
Benefit payments, including refunds of member contributions	\$ 182,692,360	\$ 166,203,470
Administrative expense	2,058,798	2,029,168
Other	42,726	42,726
Total deductions	\$ 184,793,884	\$ 168,275,364
Net increase in net position	\$ 32,433,266	\$ 25,426,883
Net position restricted for pensions		
Beginning of year	1,700,098,500	1,674,671,617
End of year	\$ 1,732,531,766	\$ 1,700,098,500

City of XYZ Retirement System
GASB Nos. 67 & 68 Report as of Fiscal Year Ending September 30, 2017
Schedule of Changes in Net Pension Liability and Related Ratios

	<u>09/30/2017</u>	<u>09/30/2016</u>	<u>09/30/2015</u>	<u>09/30/2014</u>
Total pension liability				
Service cost	\$ 26,279,333	\$ 21,625,163	\$ 19,203,823	\$ 17,233,272
Interest	160,085,065	156,265,650	156,479,438	155,338,970
Changes of benefit terms	120,903,581	0	9,453,429	0
Differences between expected and actual experience	16,422,875	12,725,721	(16,970,540)	(6,638,755)
Changes of assumptions	0	30,651,781	14,895,466	0
Benefit payments, including refunds of member contributions	(182,692,360)	(166,203,470)	(165,535,327)	(139,860,276)
Net change in total pension liability	<u>140,998,494</u>	<u>55,064,845</u>	<u>17,526,289</u>	<u>26,073,211</u>
Total pension liability - beginning	<u>2,222,547,481</u>	<u>2,167,482,636</u>	<u>2,149,956,347</u>	<u>2,123,883,136</u>
Total pension liability - ending (a)	\$ 2,363,545,975	\$ 2,222,547,481	\$ 2,167,482,636	\$ 2,149,956,347
Plan fiduciary net position				
Contributions - employer	\$ 53,264,009	\$ 48,672,615	\$ 48,616,677	\$ 47,535,499
Contributions - member	13,206,378	12,082,805	9,317,231	9,462,569
Contributions - nonemployer contributing member	0	0	0	0
Net investment income	150,421,654	132,616,216	35,529,492	132,696,604
Benefit payments, including refunds of member contributions	(182,692,360)	(166,203,470)	(165,535,327)	(139,860,276)
Administrative expenses	(2,058,798)	(2,029,168)	(2,222,561)	(2,086,240)
Other	292,383	287,885	269,771	989,372
Net change in plan fiduciary net position	<u>\$ 32,433,266</u>	<u>\$ 25,426,883</u>	<u>\$ (74,024,717)</u>	<u>\$ 48,737,528</u>
Plan fiduciary net position - beginning	<u>1,700,098,500</u>	<u>1,674,671,617</u>	<u>1,748,696,334</u>	<u>1,699,958,806</u>
Plan fiduciary net position - ending (b)	\$ 1,732,531,766	\$ 1,700,098,500	\$ 1,674,671,617	\$ 1,748,696,334
Net pension liability - ending (a) - (b)	\$ 631,014,209	\$ 522,448,981	\$ 492,811,019	\$ 401,260,013
Plan fiduciary net position as a percentage of the total pension liability	73.30%	76.49%	77.26%	81.34%
Covered-employee payroll	\$ 133,083,231	\$ 106,278,378	\$ 93,705,765	\$ 85,222,842
Net pension liability as percentage of covered-employee payroll	474.15%	491.59%	525.91%	470.84%

Fiscal year ending	09/30/2017	09/30/2016
Service cost	\$ 26,279,333	\$ 21,625,163
Interest on total pension liability	160,085,065	156,265,650
Projected earnings on pension plan investments	(121,759,093)	(121,969,078)
Changes of benefit terms	120,903,581	0
Employee contributions	(13,206,378)	(12,082,805)
Pension plan administrative expense	2,058,798	2,029,168
Other changes	0	0
Current period recognition of deferred outflows/(inflows) of resources		
Differences between Expected & Actual Experience in measurement of the Total Pension Liability	\$ 229,203	\$ (2,116,922)
Changes of assumptions	6,861,404	6,861,404
Differences between Projected & Actual Earnings on Pension Plan Investments	8,801,620	14,601,154
Total	\$ 190,253,533	\$ 65,213,734

City of XYZ Retirement System
GASB Nos. 67 & 68 Report as of Fiscal Year Ending September 30, 2017
Deferred Outflows of Resources and Deferred Inflows of Resources Related to Pensions

Differences between expected and actuarial experience in measurement of the total pension liability for fiscal year ending:	Initial Balance	Initial Amortization Period	Annual Recognition	09/30/2017 Balance
September 30, 2017	\$ 16,422,875	7.0	\$ 2,346,125	\$ 14,076,750
September 30, 2016	\$ 12,725,721	7.0	\$ 1,817,960	\$ 9,089,801
September 30, 2015	\$ (16,970,540)	6.0	\$ (2,828,423)	\$ (8,485,271)
September 30, 2014	\$ (6,638,755)	6.0	\$ (1,106,459)	\$ (2,212,919)
			\$ 229,203	\$ 12,468,361

Changes in assumptions for fiscal year ending:	Initial Balance	Initial Amortization Period	Annual Recognition	09/30/2017 Balance
September 30, 2017	\$ 0	7.0	\$ 0	\$ 0
September 30, 2016	\$ 30,651,781	7.0	\$ 4,378,826	\$ 21,894,129
September 30, 2015	\$ 14,895,466	6.0	\$ 2,482,578	\$ 7,447,732
			\$ 6,861,404	\$ 29,341,861

Differences between projected and actual earnings on pension plan investments for fiscal year ending:	Initial Balance	Initial Amortization Period	Annual Recognition	09/30/2017 Balance
September 30, 2017	\$ (28,997,670)	5.0	\$ (5,799,534)	\$ (23,198,136)
September 30, 2016	\$ (10,977,749)	5.0	\$ (2,195,550)	\$ (6,586,649)
September 30, 2015	\$ 91,799,093	5.0	\$ 18,359,819	\$ 36,719,636
September 30, 2014	\$ (7,815,573)	5.0	\$ (1,563,115)	\$ (1,563,113)
			\$ 8,801,620	\$ 5,371,738

	Deferred Outflows of Resources	Deferred Inflows of Resources
Differences between expected and actual experience	\$ 23,166,551	\$ (10,698,190)
Changes of Assumptions	\$ 29,341,861	\$ 0
Net difference between projected and actual earnings on pension plan investments	\$ 36,719,636	\$ (31,347,898)
	\$ 89,228,048	\$ (42,046,088)

The balances as of September 30, 2017 of the deferred outflows/(inflows) of resources will be recognized in pension expense for the fiscal year ending September 30.

2018	\$ 15,892,229
2019	\$ 17,455,339
2020	\$ 201,979
2021	\$ 2,743,377
2022	\$ 8,542,911
Thereafter	\$ 0

The long-term expected rate of return on pension plan investments was determined using a building-block method in which expected future real rates of return (expected returns, net of pension plan investment expense and inflation) are developed for each major asset class. These expected future real rates of return are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation. Best estimates of arithmetic real rates of return for each major asset class included in the pension plan's target asset allocation as of September 30, 2017 are summarized in the following table:

Asset class	Target allocation	Long-term expected real rate of return
Domestic fixed income	41.0%	3.03%
Domestic equities	30.0%	3.13%
International equities	18.0%	3.62%
Real estate	8.0%	3.13%
Private equity	3.0%	5.08%
Cash	0.0%	0.18%
	<hr/>	
	100.0%	
Total		

Long-term expected rate of return is 7.50%.

Discount rate

The discount rate used to measure the total pension liability was 7.50%. The projection of cash flows used to determine the discount rate assumed that plan member contributions will be made at the current contribution rate and that contributions will be made at rates equal to the difference between actuarially determined contribution rates and the member rate. Professional judgment on future contributions has been applied in those cases where contribution patterns deviate from the actuarially determined rates. Based on those assumptions, the pension plan's fiduciary net position was projected to be available to make all projected future benefit payments of current plan members. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the total pension liability.

Sensitivity of the net pension liability to changes in the discount rate

The following presents the net pension liability, calculated using the discount rate of 7.50%, as well as what the net pension liability would be if it were calculated using a discount rate that is 1-percentage-point lower (6.50%) or 1-percentage-point higher (8.50%) than the current rate:

	<u>1% Decrease (6.50%)</u>	<u>Current Discount Rate (7.50%)</u>	<u>1% Increase (8.50%)</u>
Net pension liability	\$ 859,222,591	\$ 631,014,209	\$ 422,899,964

City of XYZ Retirement System
GASB Nos. 67 & 68 Report as of Fiscal Year Ending September 30, 2017
Schedule of Contributions

	<u>2017</u>	<u>2016</u>	<u>2015</u>	<u>2014</u>	<u>2013</u>
Actuarially determined contribution	\$ 53,264,009	\$ 48,672,615	\$ 48,616,677	\$ 47,305,679	\$ 45,412,248
Contributions in relation to the actuarially determined contribution	53,264,009	48,672,615	48,616,677	47,305,679	45,412,248
Contribution deficiency (excess)	\$ 0				
Covered-employee payroll	\$ 141,497,840	\$ 133,083,231	\$ 106,278,378	\$ 93,705,765	\$ 85,222,842
Contributions as a percentage of covered-employee payroll	37.64%	36.57%	45.74%	50.48%	53.29%
	<u>2012</u>	<u>2011</u>	<u>2010</u>	<u>2009</u>	<u>2008</u>
Actuarially determined contribution	\$ 47,418,316	\$ 47,156,797	\$ 59,025,379	\$ 36,993,395	\$ 36,040,251
Contributions in relation to the actuarially determined contribution	47,418,316	47,156,797	59,025,379	36,993,395	36,040,251
Contribution deficiency (excess)	\$ 0				
Covered-employee payroll	\$ 82,205,838	\$ 82,164,617	\$ 80,152,355	\$ 122,212,346	\$ 129,369,531
Contributions as a percentage of covered-employee payroll	57.68%	57.39%	73.64%	30.27%	27.86%

The total pension liability as of September 30, 2016 was determined using the following actuarial assumptions:

Actuarial Cost Method	Entry Age Method																								
Asset Method	Market Value of Assets.																								
Interest Rates																									
Discount Rate	7.50%																								
Expected Long Term Rate of Return	7.50%																								
Municipal Bond Rate	3.60%																								
Inflation	3.25%																								
Annual Pay Increases	1.5% for promotions plus salary merit scale below.																								
	<table border="0" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th style="text-align: center;"><u>Service</u></th> <th style="text-align: center;"><u>Police</u></th> <th style="text-align: center;"><u>Fire</u></th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">0-6</td> <td style="text-align: center;">5.0%</td> <td style="text-align: center;">5.0%</td> </tr> <tr> <td style="text-align: center;">7</td> <td style="text-align: center;">2.5%</td> <td style="text-align: center;">5.0%</td> </tr> <tr> <td style="text-align: center;">8-9</td> <td style="text-align: center;">5.0%</td> <td style="text-align: center;">5.0%</td> </tr> <tr> <td style="text-align: center;">10-14</td> <td style="text-align: center;">1.0%</td> <td style="text-align: center;">0.0%</td> </tr> <tr> <td style="text-align: center;">15-16</td> <td style="text-align: center;">1.25%</td> <td style="text-align: center;">2.5%</td> </tr> <tr> <td style="text-align: center;">17-21</td> <td style="text-align: center;">1.0%</td> <td style="text-align: center;">1.0%</td> </tr> <tr> <td style="text-align: center;">22+</td> <td style="text-align: center;">0.0%</td> <td style="text-align: center;">0.0%</td> </tr> </tbody> </table>	<u>Service</u>	<u>Police</u>	<u>Fire</u>	0-6	5.0%	5.0%	7	2.5%	5.0%	8-9	5.0%	5.0%	10-14	1.0%	0.0%	15-16	1.25%	2.5%	17-21	1.0%	1.0%	22+	0.0%	0.0%
<u>Service</u>	<u>Police</u>	<u>Fire</u>																							
0-6	5.0%	5.0%																							
7	2.5%	5.0%																							
8-9	5.0%	5.0%																							
10-14	1.0%	0.0%																							
15-16	1.25%	2.5%																							
17-21	1.0%	1.0%																							
22+	0.0%	0.0%																							
Measurement Date	September 30, 2016																								
Ad-hoc Cost-of-living Increases	Amount varies annually with the adjustment on January 1																								
Mortality Rates																									
Healthy	Florida Retirement System special risk mortality projected with scale BB generationally																								
Disabled	Florida Retirement System disabled mortality (no projection scale)																								

Retirement Rates

If eligible for Retirement, the following decrements apply, based on service.

<u>Years of Service</u>	<u>Police %</u>	<u>Fire %</u>
<20	0	0
20	10	10
21-24	3	3
25-29	40	5
30-34	50	25
35	100	25
36		25
37		100

All other assumptions

As described in the assumptions section of the actuarial determined contribution

Experience Study

Last performed for the period October 1, 2011 – September 30, 2014

Changes since prior report

None.

Cost Method

Aggregate Cost Method

Asset Valuation Method

20% Write-Up Method: Expected actuarial value of assets, adjusted by 20% of the difference between expected actuarial value and actual market value (net of pending transfers to the COLA Fund).

The result cannot be greater than 120% of market value or less than 80% of market value (net of pending COLA transfers).

Interest Rates

7.50% net of investment expenses

Annual Pay Increases

3.25% inflation and 1.5% for promotions and other increases plus salary merit scale below.

	<u>Service</u>	<u>Police</u>	<u>Fire</u>
	0-6	5.0%	5.0%
	7	2.5%	5.0%
	8-9	5.0%	5.0%
	10-14	1.0%	0.0%
	15-16	1.25%	2.5%
	17-21	1.0%	1.0%
	22+	0.0%	0.0%

There is no additional increase at retirement.

Expense and/or Contingency Loading

\$2,029,168

Mortality Rates

Healthy

RP2000 Mortality Table projected to 2020 using scale AA

Disabled

RP 2000 Disabled Mortality Table projected to 2020 using scale AA

100% of the assumed deaths are expected to be ordinary deaths

Retirement Rates

If eligible for Retirement, the following decrements apply, based on service.

<u>Years of Service</u>	<u>Police %</u>	<u>Fire %</u>
<20	0	0
20	10	10
21-24	3	3
25-29	40	5
30-34	50	25
35	100	25
36		25
37		100

All Members are assumed to elect a 5-year BackDROP when they reach five years following first retirement eligibility.

Disability Rates

100% of the disabilities are expected to be accidental with the following probabilities. No recovery is assumed.

<u>Age</u>	<u>Rates</u>
35	0.285%
40	0.390%
45	0.800%
50	1.210%

Withdrawal Rates

Based on Years of Creditable Service using the rates below

<u>Age</u>	<u><5</u>	<u>5+</u>
30	2.40%	1.92%
35	2.40%	1.92%
40	1.80%	1.44%
45	1.20%	0.96%
50	0.00%	0.00%

Marital Status and Ages

100% of Members are assumed to be married. Female spouses assumed to be 3 years younger than male spouses.

Compensated Absence Balance Transfers

No liabilities or costs are included for the provision to transfer compensated absence balances into FIPO to purchase additional creditable service, based on our understanding that assets will be transferred immediately prior to retirement to cover 100% of the liability for the additional service.

Withdrawal of Employee Contributions

It is assumed that employees do not withdraw their contribution balances upon employment termination or retirement.

Changes since prior report

None.



***Employees' Retirement System
of the
ABC City, Town, County***

***Board Summary of
January 1, 2016 Actuarial Valuation
May 12, 2016***

Table of Contents

nyhart

CTCPERS	
- Summary of Results	2
- Plan Experience and Impact on Funding	5
- Funded Ratio (Historical)	6
- Asset Information	7
- Participant Information	9
Police Guarantee Trust	
- Summary of Results	11
- Funded Ratio (Historical)	13
GASB 67/68 Information	14
Final Thoughts	18
High Level Summaries of Plan Provisions	20
Summaries of Assumptions and Methods	25
Certification	27

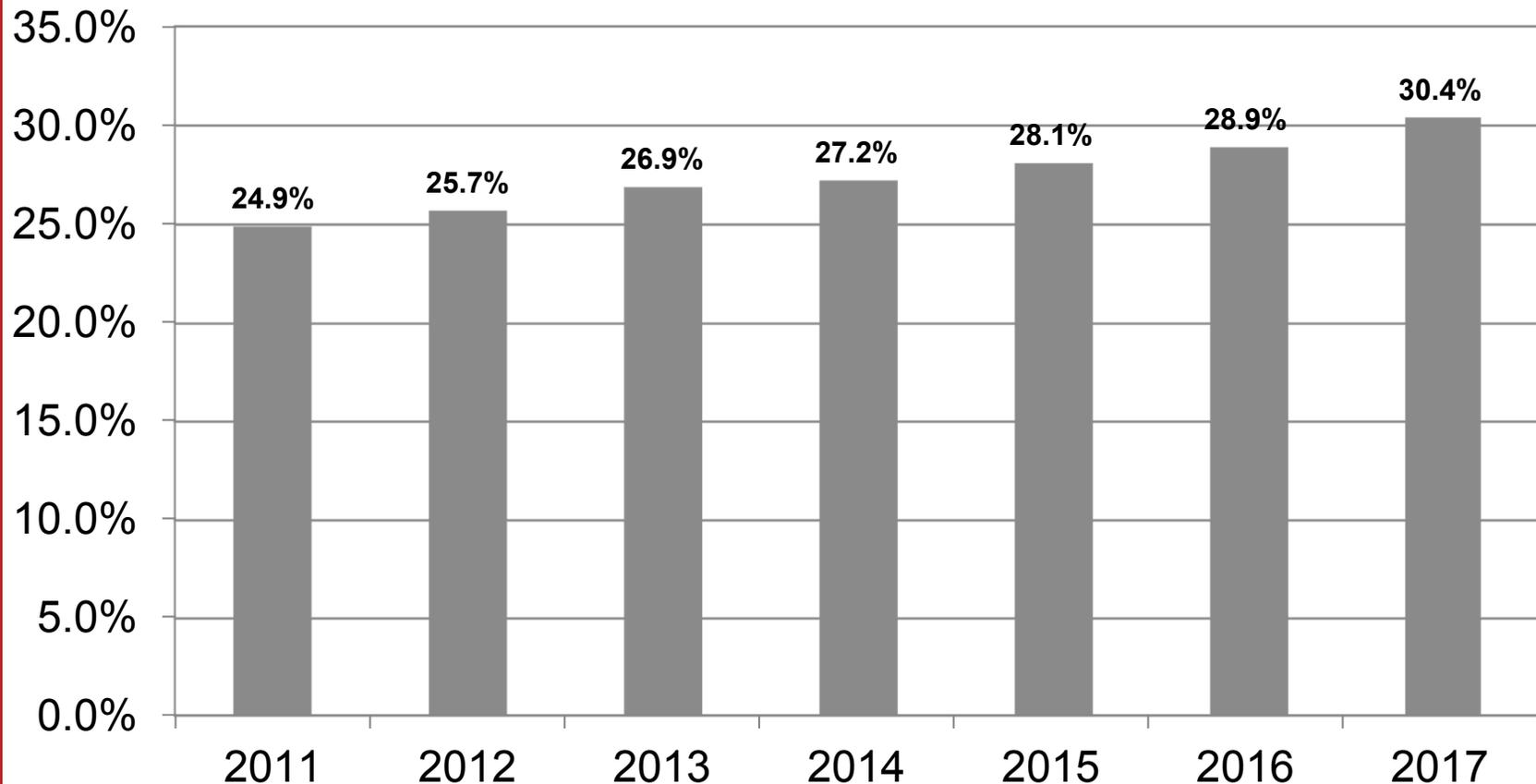
Summary of Results (\$ in Millions)

nyhart

Valuation Date	01/01/2016	01/01/2015
Entry Age Accrued Liability	\$ 1,615.0	\$ 1,559.3
Actuarial Value of Assets	<u>1,119.7</u>	<u>1,106.6</u>
Unfunded Accrued Liability	\$ 495.3	\$ 452.7
Funded Ratio	69%	71%
Market Value of Assets	\$1,021.6	\$1,072.5
Actuarial / Market Value	110%	103%
Plan Sponsor Contribution		
Normal Cost with Expenses	\$23.2	\$23.0
Amortization of UAAL	30.0	27.0
Interest	1.4	1.7
Expected Member Contributions	<u>(12.7)</u>	<u>(12.5)</u>
Total City, Town, County, Contribution	\$41.9	\$39.2
City, Town, County Contribution Rate	30.4%	28.9%

City, Town, County Funding Requirement

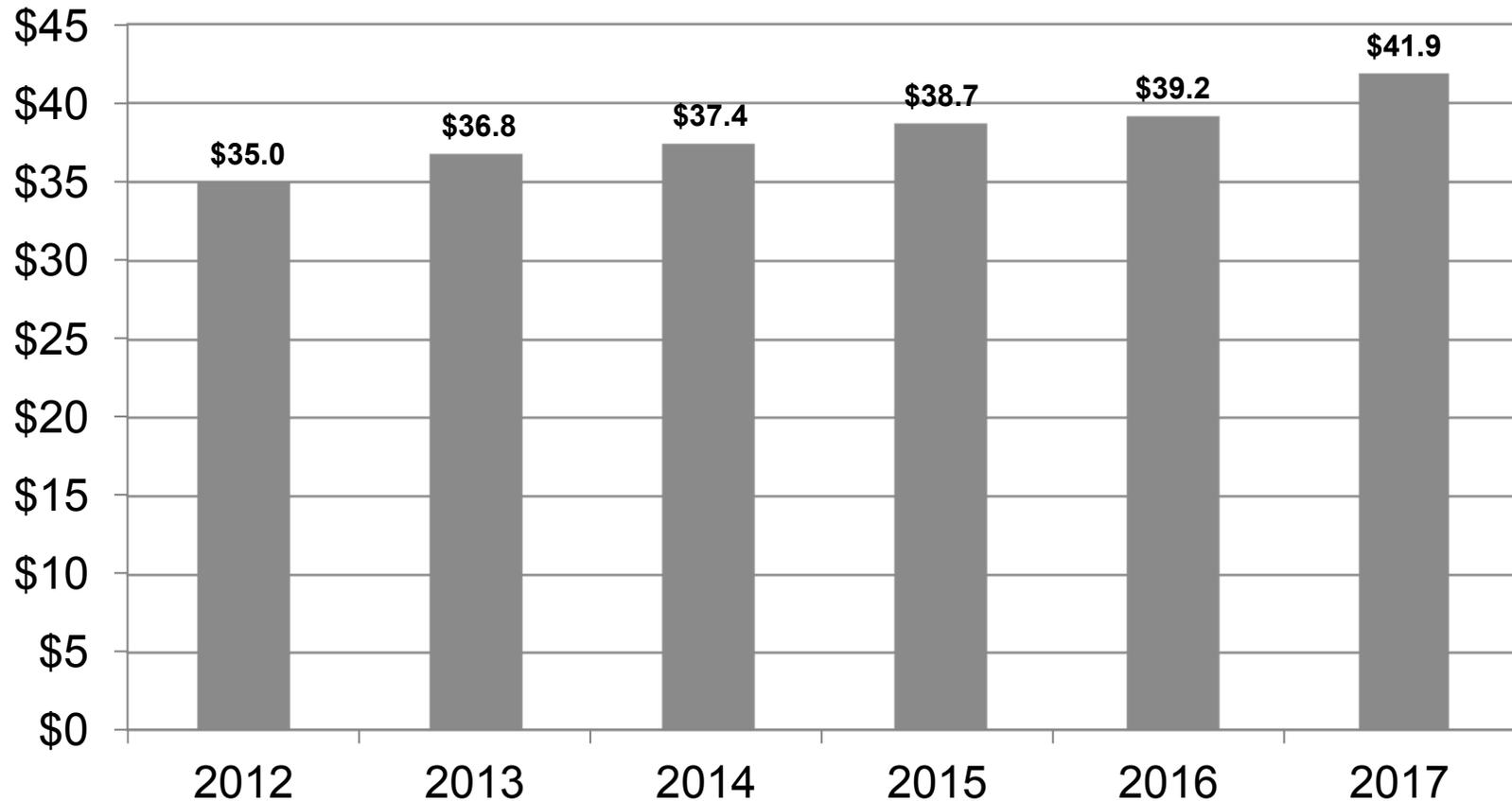
Percent of Payroll by Fiscal Year



City, Town, County Funding Requirement (\$ millions)

nyhart

Funding Requirement by Fiscal Year

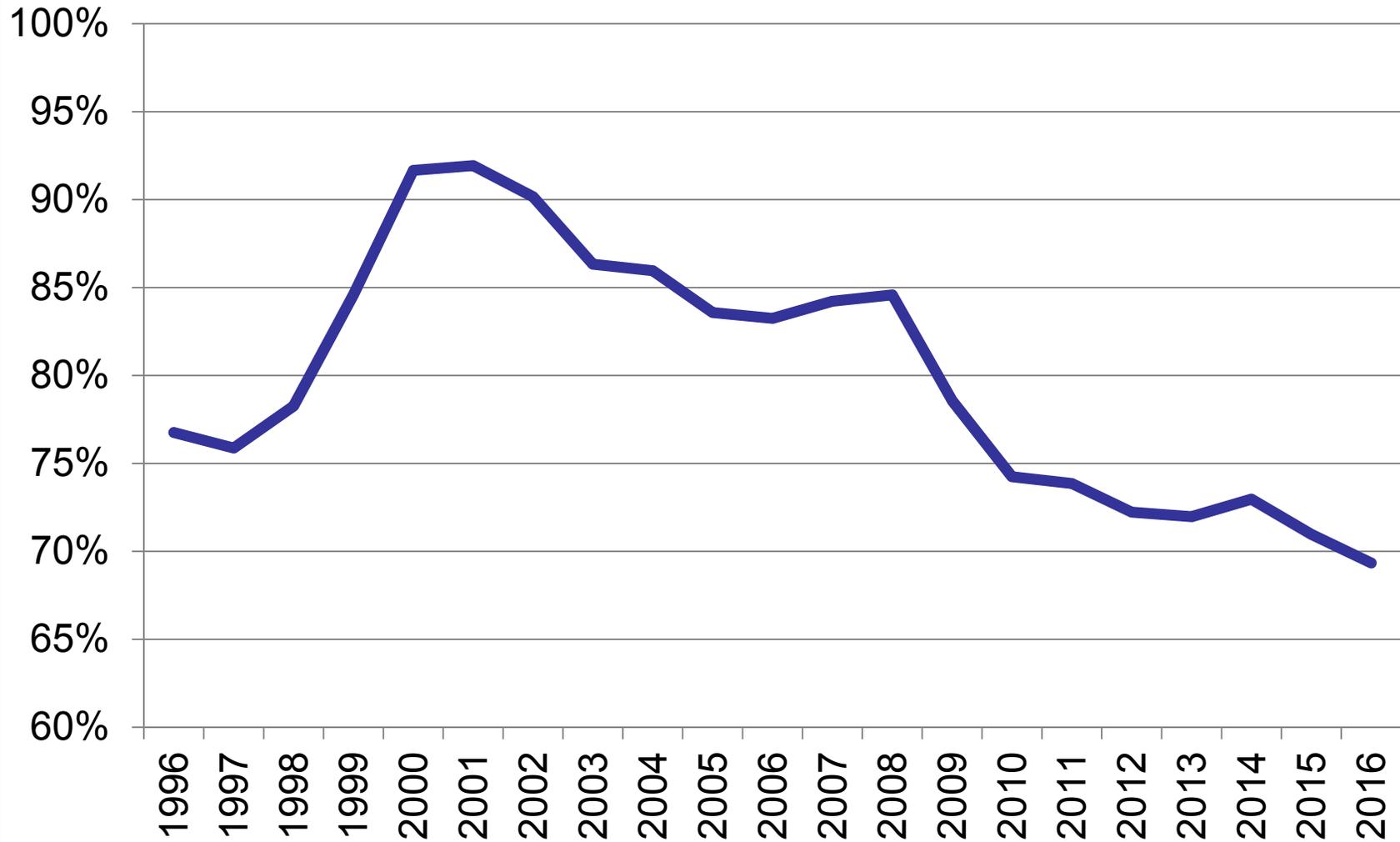


Plan Experience and Impact on Funding (\$ millions)

	Effect on UAAL	Effect on ER Cont		
Source	(- \$ -)	(- \$ -)	(% of pay)	Reason
Expected change	(1.1)	(0.81)	2.06	Yearly growth
Retirement & DROP	10.5	0.65	0.53	135 actual vs. 122 expected, DROP account balance
Mortality	(3.2)	(0.20)	(0.16)	116 actual vs. 91 expected
Disability	0.3	0.02	0.01	4 actual vs. 17 expected
Turnover	1.4	0.09	0.07	267 actual vs. 250 expected
Salaries	5.3	0.57	(0.19)	6.1% increase vs. 4.1% expected
Assets	24.5	1.54	1.12	5.00% on actuarial value vs. 7.25% expected (Market Value return of -0.9%)
New Members	0.4	0.87	(1.92)	365 new members
Other	4.7	0.22	0.19	Data changes, Admin. Expenses, etc.
Plan Changes	<u>(0.2)</u>	<u>(0.24)</u>	<u>(0.17)</u>	
Total	42.6	2.71	1.54	

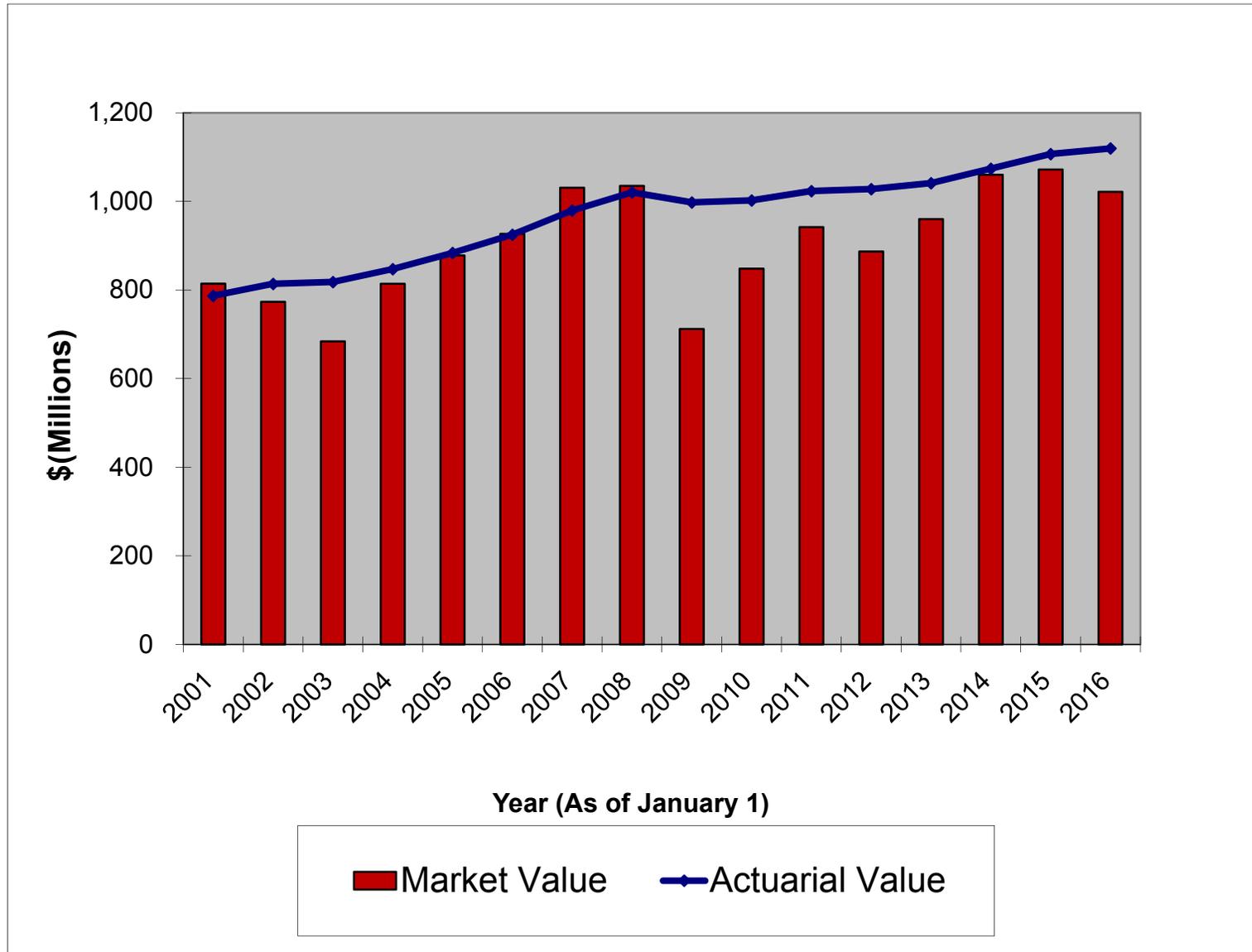
Funded Ratio *

nyhart



* Actuarial Value of Assets divided by Entry Age Accrued Liability

Actuarial vs. Market Value of Assets



Market and Actuarial Value of Assets (\$ in millions)

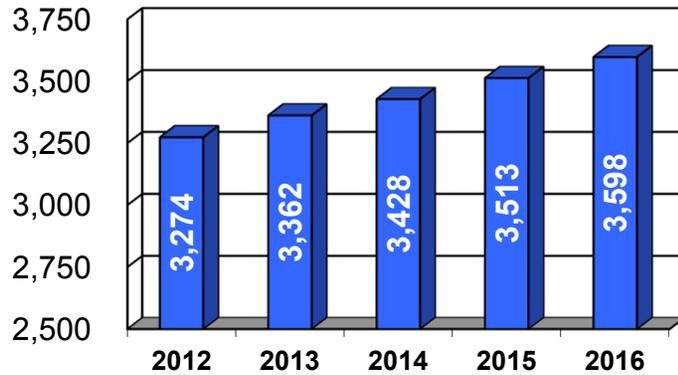
	1/1/2012	1/1/2013	1/1/2014	1/1/2015	1/1/2016
Market Value	\$887.0	\$960.0	\$1,060.1	\$1,072.5	\$1,021.6
Actuarial Value	\$1,028.0	\$1,041.2	\$1,074.0	\$1,106.6	\$1,119.7
Actuarial Value/ Market Value	116%	108%	101%	103%	110%
Rate of Return					
Market Value	(2.1)%	13.3%	14.9%	4.8%	(0.9)%
Actuarial Value	4.0%	5.5%	7.2%	6.7%	5.0%

Historical Rates of Return

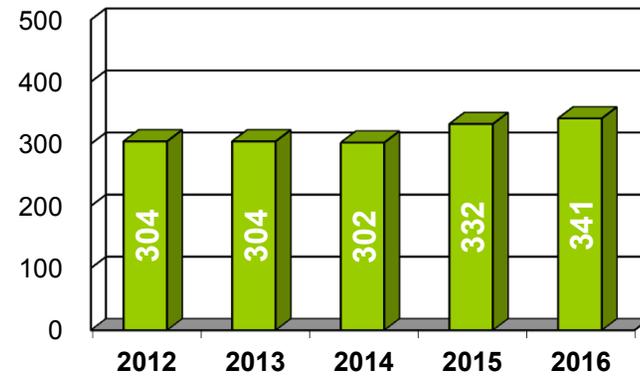
Average Returns	3 Years	5 Years	15 Years	27 Years
Market Value	6.1%	5.8%	5.3%	7.6%
Actuarial Value	6.3%	5.7%	5.9%	N.A.

Participant Information

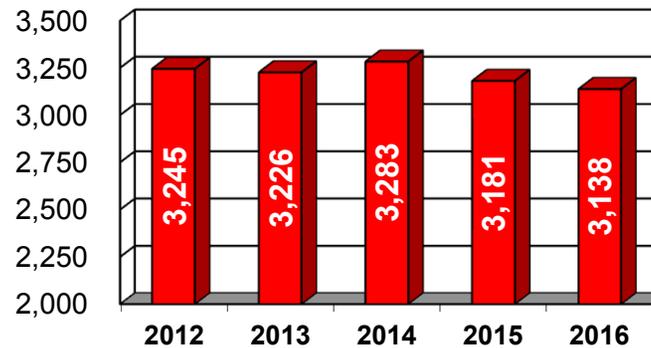
**Retirees/Beneficiaries/Disabled
(including DROPs)**



DROP Participants



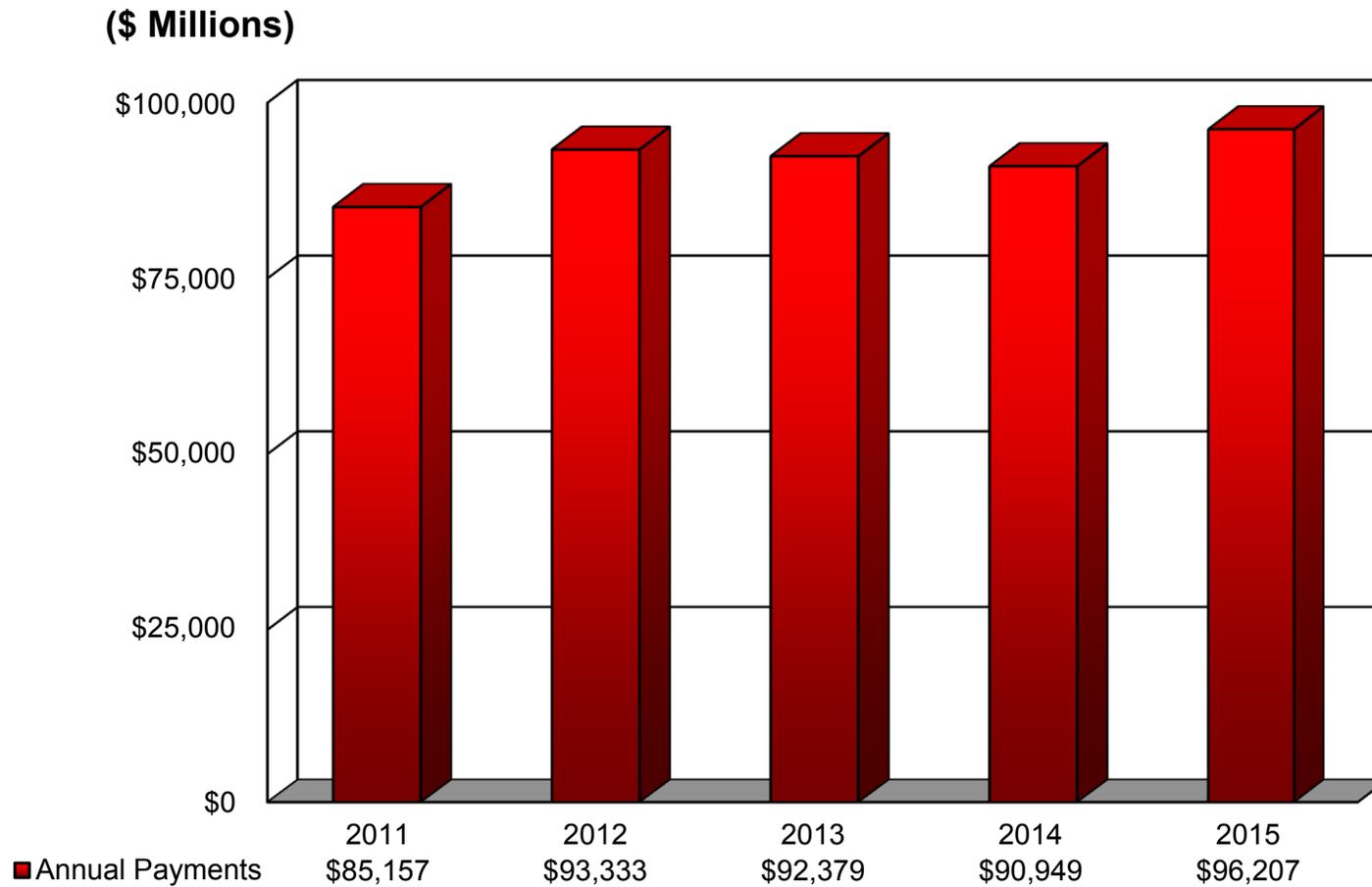
**Active Participants
(excluding DROPs)**



Active Demographics

	2012	2013	2014	2015	2016
Average Age	43.8	43.6	43.3	43.5	43.4
Average Service	10.6	10.5	9.0	8.9	8.8
Average Plan Compensation	\$42,151	\$42,600	\$41,971	\$42,615	\$43,847

Annual Benefit Payments



* Including amounts from COLA accounts.

Distributions as % of Assets				
2011	2012	2013	2014	2015
9.0%	10.5%	9.6%	8.6%	9.0%

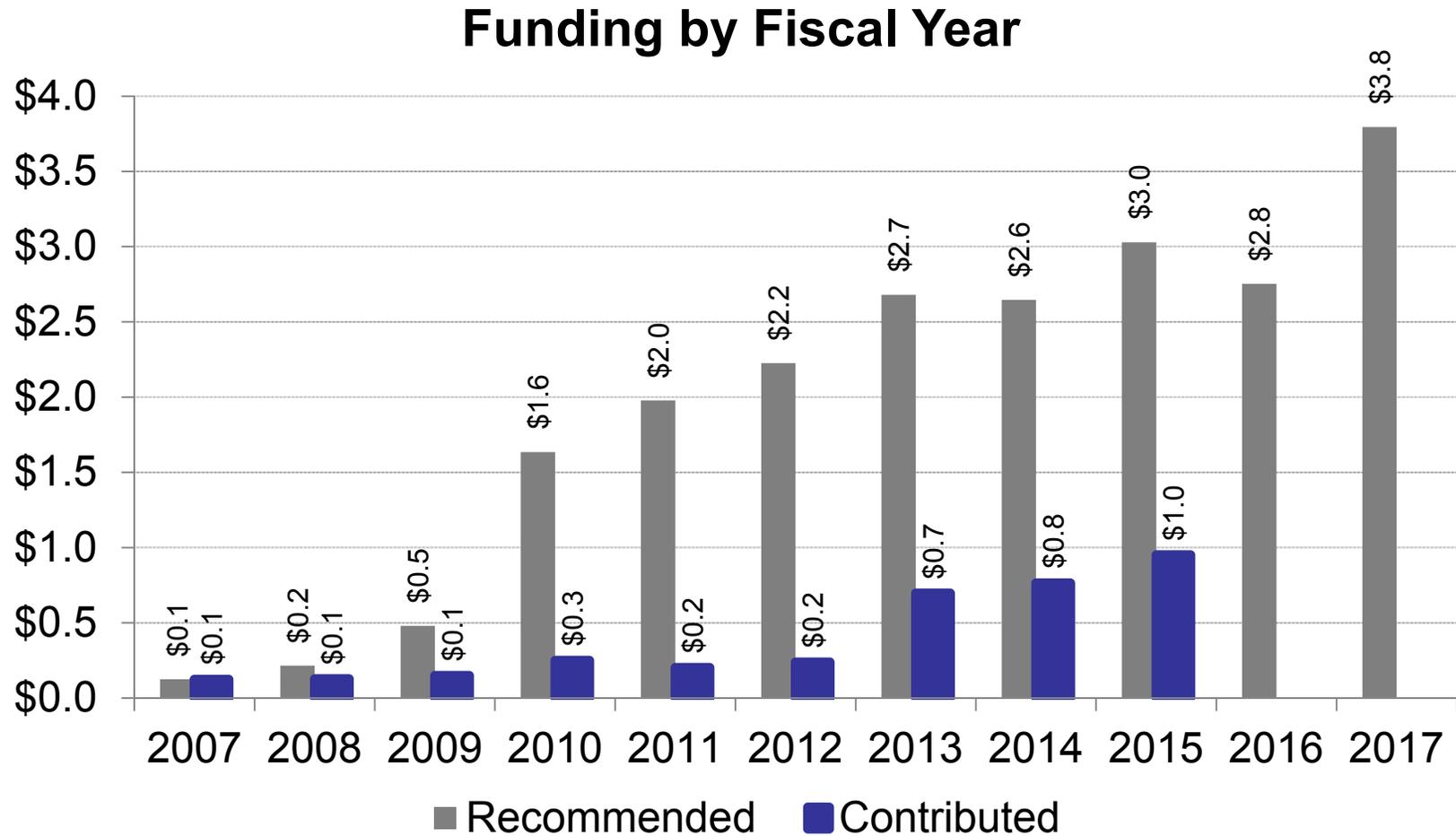
Summary of Results – CTCGT

(\$ in Millions)

nyhart

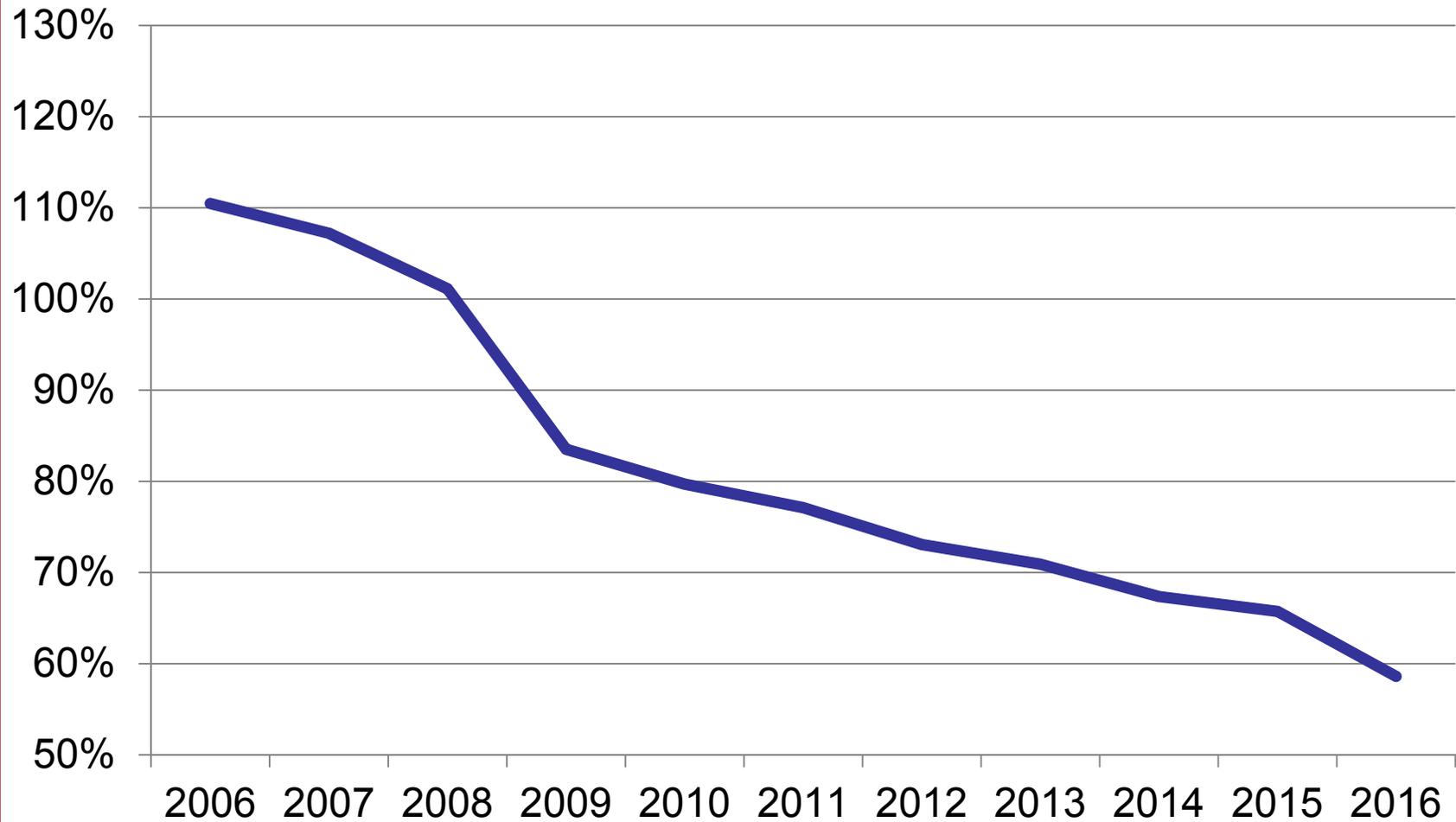
Valuation Date	01/01/2016	01/01/2015
Entry Age Accrued Liability	\$ 38.99	\$ 35.57
Actuarial Value of Assets	<u>22.85</u>	<u>23.38</u>
Unfunded Accrued Liability	\$ 16.14	\$ 12.19
Funded Ratio	58.6%	65.7%
Market Value of Assets	\$ 18.57	\$ 20.09
Actuarial / Market Value	123%	116%
Expected Contribution (\$000s)		
Plan Sponsor	\$3,795.01	\$2,752.65
- rate	26.77%	19.57%
Member	\$84.63	\$78.95
- rate	0.60%	0.56%

Funding Requirement – CTCGT (\$ millions)



Funded Ratio – CTCGT *

nyhart



* Actuarial Value of Assets divided by Entry Age Accrued Liability

GASB 67 Summary (CTCPERS)

- **A separate report displays all necessary disclosures for the plan year ending December 31, 2015**

December 31, 2015 GASB 67 Summary

Discount Rate ⁽¹⁾	6.25%	7.25%	8.25%
Total Pension Liability	\$1,780,760,701	\$1,599,966,548	\$1,448,823,145
Fiduciary Net Position	<u>(1,023,186,927)</u>	<u>(1,023,186,927)</u>	<u>(1,023,186,927)</u>
Net pension liability	\$ 757,573,774	\$ 576,779,621	\$ 425,636,218
Funded Ratio ⁽²⁾	57.5%	64.0%	70.6%

(1) + 1%, -1% required, using RP-2000 Healthy Combined Blue Collar or RP-2000 Disabled Mortality Projected with Scale BB to 2019 (valuation assumption)

(2) Based on Market Value

➤ **GASB 68 Cost Sharing Multi-Employer Reporting**

- **12/31/2015 reporting based on 12/31/2014 measurement date**
- **A separate report dated displays all necessary GASB 68 disclosures by employer for the plan year ending December 31,2015**
- **Expenses, Deferred Inflows/Outflows, and Remaining balances are proportionally allocated to each employer based on the 1/1/2017 Recommended Contribution as a percentage of payroll.**
 - **Each employer's payroll during the period 1/1/2015 – 12/31/2015 is the basis for proportional allocation**

December 31, 2014 GASB 68 Summary – for December 31, 2015 Reporting Purposes

Differences between Expected and Actual Experience	\$170,162
Changes of Assumptions	\$0
Differences between Projected and Actual Earnings on Pension Plan Investments	\$5,529,495
Pension Expense for the 12/31/2015 Reporting	\$45,908,298

- **A separate report displays all necessary disclosures for the plan year ending December 31, 2015**

December 31, 2015 GASB 67 Summary			
Discount Rate ⁽¹⁾	5.53%	6.53%	7.53%
Total Pension Liability	\$38,796,497	\$37,961,347	\$37,144,175
Fiduciary Net Position	<u>(18,565,604)</u>	<u>(18,565,604)</u>	<u>(18,565,604)</u>
Net pension liability	\$20,230,893	\$19,395,743	\$18,578,571
Funded Ratio ⁽²⁾	47.9%	48.9%	50.0%

(1) + 1%, -1% required, using RP2000 Healthy Combined Blue Collar Projected to 2019 with Scale BB (valuation assumption)

(2) Based on Market Value

- **12/31/2015 reporting based on 12/31/2014 measurement date**
- **A separate report dated displays all necessary GASB 68 disclosures by employer for the plan year ending December 31, 2015**

December 31, 2014 GASB 68 Summary – for December 31, 2015 Reporting Purposes

Differences between Expected and Actual Experience	\$0
Changes of Assumptions	\$85,186
Differences between Projected and Actual Earnings on Pension Plan Investments	\$138,738
Pension Expense for the 12/31/2015 Reporting	\$1,979,978

Final Thoughts

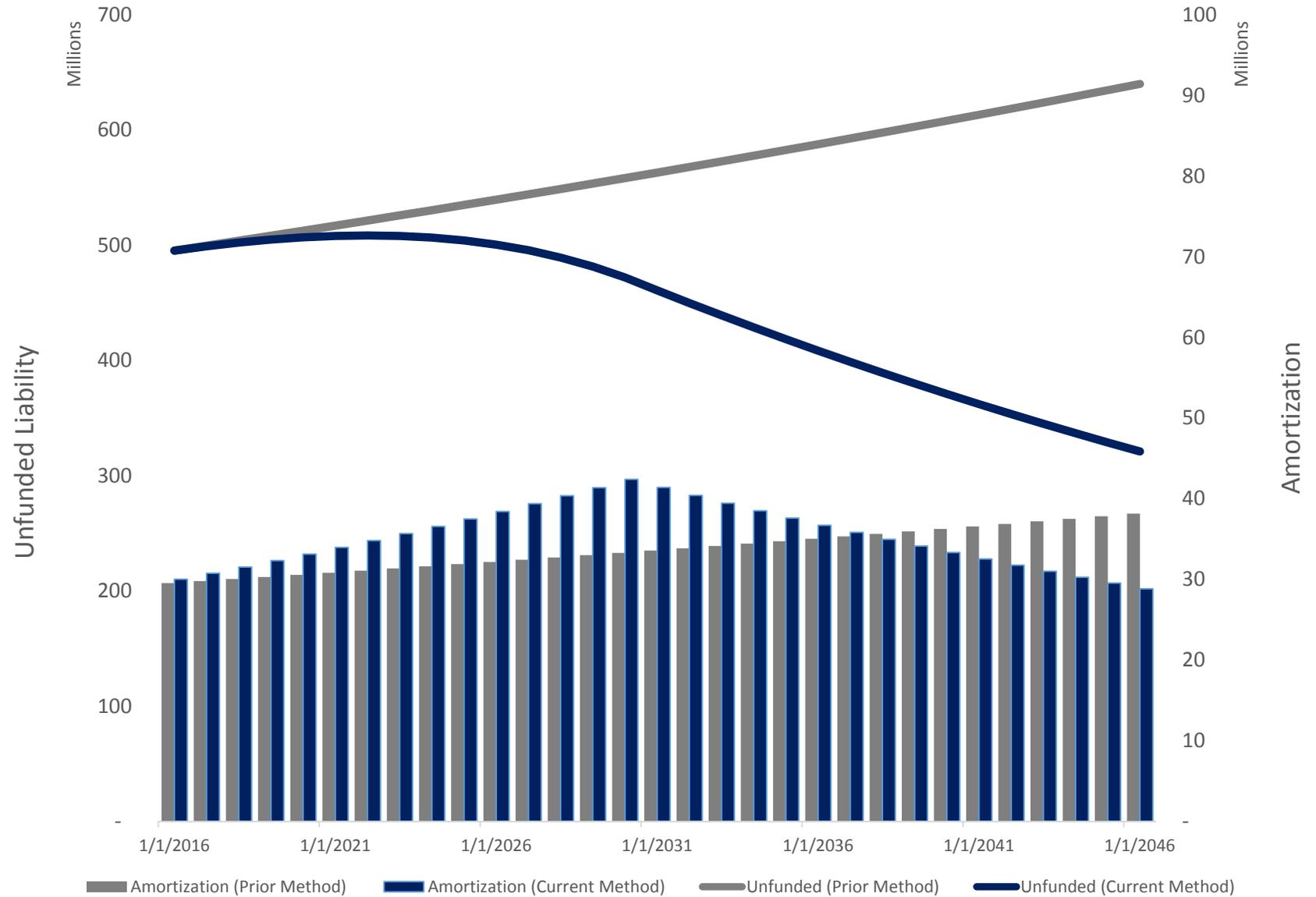
We realize that costs have increased from the prior year, which impacts your annual budget. As we look to the future, here are some items worth noting:

- **Recent assumption study**
 - **Decrements based on more recent experience**
 - **Return assumption lowered so improved likelihood of reaching expectation**
 - **Amortization period reducing yearly to improve financial position of the plan**
- **Plan changes will reduce future costs but it will take some time to see significant impact**
- **A lot of the cost pressure is coming from asset performance being less than assumed**
 - **Actuarial value is 10% higher than market value**
 - **18% market return needed to avoid having an actuarial asset loss next year**
 - **If the market return is 7.25%, the Actuarial Value of Assets loss will be about \$21 million for 2016, resulting in an additional \$1.3 million in contributions**
- **CTCGT funded ratio decreased further from 2015 and we recommend reviewing the funding policy and/or other strategies**

City, Town, County Unfunded Liability (CTCPERS)

nyhart

Projected Unfunded Liability & Amortization



High Level Summary of Plan Provisions nyhart CTCPERS

Benefit Component	Description
Formula	<p>Full Retirement: 3% of Final Average Compensation times Creditable Service</p> <p>Minimum Eligibility: 2.5% of Final Average Compensation times Creditable Service</p> <p>Maximum of 90% of Final Average Compensation</p>
Member Contributions	9.5% of compensation (floating)
Final Average Compensation	<p>Hire date prior to 9/1/2015: Average compensation during the highest 36 consecutive months of Creditable Service</p> <p>Hire date on or after 9/1/2015: Average compensation during the highest 60 consecutive months of Creditable Service</p>
Normal Form	<p>Hire date prior to 9/1/2015: Joint & 50% Contingent Survivor</p> <p>Hire date on or after 9/1/2015: Life Annuity</p>

High Level Summary of Plan Provisions nyhart CTCPERS

Benefit Component	Description
Service Retirement Eligibility	<p><u>Hire date prior to 9/1/2015:</u> Full Retirement: 25 years of service, regardless of age</p> <p>Minimum Eligibility: Age 55 with 10 years of service, or 20 years of service regardless of age</p> <p><u>Non-Public Safety hire date on or after 9/1/2015:</u> Full Retirement: 25 years of service and age 55</p> <p>Minimum Eligibility: Age 60 with 10 years of service, or 20 years of service regardless of age</p> <p><u>Public Safety hire date on or after 9/1/2015:</u> Full Retirement: 25 years of service and age 50</p> <p>Minimum Eligibility: Age 55 with 10 years of service, or 20 years of service regardless of age</p>
Early Service Retirement	<p>Hire date prior to 9/1/2015: If not eligible for full retirement, benefits are reduced prior to age 55</p> <p>Hire date on or after 9/1/2015: If not eligible for full retirement, benefits are reduced to an actuarial equivalent benefit</p>

High Level Summary of Plan Provisions nyhart CTCPERS

Benefit Component	Description
Disability - Service Connected - Non-Service	50% of Final Average Compensation plus 1.5% of Final Average Compensation times Creditable Service in excess of 10 years (maximum 90% of Final Average Compensation) After 10 years of Creditable Service, 2.5% of Final Average Compensation times Creditable Service with a minimum of 50% of Final Average Compensation
Survivor Benefits	<p>If eligible for retirement or at least 20 years of Creditable Service, surviving spouse may elect Option 2 benefits or a refund of the Member's contributions</p> <p>If not eligible for retirement, surviving spouse may elect a monthly benefit of \$600 payable until remarriage or a refund of the Member's contributions</p> <p>If eligible children under age 18, monthly benefit of \$150 per child (maximum \$300) payable until age 18.</p> <p>If no benefits are payable based on above, \$150 monthly benefit to unmarried dependent parent until death or remarriage.</p>
Termination	After 10 years of Creditable Service, based on Creditable Service and Final Average Compensation at termination date with benefits deferred to age 55 (benefit is forfeited if Member withdraws contributions)

High Level Summary of Plan Provisions nyhart CTCPERS

Benefit Component	Description
DROP - Eligibility	<p>Hire date prior to 9/1/2015: Eligible to retire with immediate service retirement allowance and between 25 and 30 years of Creditable Service</p> <p>Non-public safety hire date on or after 9/1/2015: Eligible to retire at age 55 with immediate service retirement allowance and between 25 and 33 years of Creditable Service</p> <p>Public safety hire date on or after 9/1/2015: Eligible to retire at age 50 with immediate service retirement allowance and between 25 and 33 years of Creditable Service</p>
- Duration	<p>Hire date prior to 9/1/2015: The lesser of 5 years or 32 minus Creditable Service at DROP entry</p> <p>Hire date on or after 9/1/2015: The lesser of 5 years; or 35 years minus Creditable Service at DROP entry; or difference between (a) & (b) provided difference is at least 2 years: (a) Earliest eligibility plus 5 years and (b) Election for DROP</p>
- Benefit	DROP account can be paid as lump sum or monthly payments

High Level Summary of Plan Provisions nyhart CTCGT

Benefit Component	Description
Formula	Excess of benefits that would have been payable under CTCBERS, based on February 26, 2000 provisions, over the benefits payable under MPERS
Eligibility	Police officers who were active members (or in DROP) with CTCBERS on February 26, 2000 and who elected to transfer in MPERS.
Transferred Assets	Initial funding of \$24.6 million from CTCBERS as of January 1, 2000
Contributions	Based on current member contribution rate under CTCBERS (“picked up” by the City, Town, County)

Summary of Assumptions and Methods nyhart CTCPERS

Assumption/Method	Description
Funding Interest Rate	7.25% (net of investment expenses)
Annual Pay Increases	2.75% plus merit & promotion totaling 2.75%-6.75% based on age
Mortality Rates	RP-2000 Healthy Combined Blue Collar Projected with Scale BB to 2019 Disabled: RP-2000 Disabled Mortality Projected with Scale BB to 2019
Retirement Rates	Varies by Age prior to 25 years of service; varies by Service on and after 25 years of service.
Withdrawal Rates	Varies by age, service, and employee group
Disability	Varies by age
Valuation Method	Entry age normal cost method and starting January 1, 2015, the UAAL is amortized over a 30-year period using an annual total payroll growth assumption (2.5% annually). The period will be reduced in successive years until reaching a 15-year open period.
Asset Method	20% Write-Up Method
Accrued Leave	Members hired on or after April 4, 2015 are assumed not to exchange any accrued leave for retirement benefits

Assumptions were last updated based on the assumption study completed for 2009-2013.

Summary of Assumptions and Methods nyhart CTCGT

Assumption/Method	Description
Funding Interest Rate	7.25% (net of investment expenses)
Annual Pay Increases	2.75% plus merit & promotion totaling 2.75%-6.75% based on age
Mortality Rates	RP-2000 Healthy Combined Blue Collar Projected with Scale BB to 2019 Disabled: RP-2000 Disabled Mortality Projected with Scale BB to 2019
Retirement Rates	Varies by Age prior to 25 years of service; varies by Service on and after 25 years of service.
Withdrawal Rates	Varies by age and service
Disability	Varies by age
Valuation Method	Aggregate cost method
Asset Method	20% Write-Up Method

Assumptions were last updated based on the assumption study completed for 2009-2013.

Certification



This report has been prepared for the primary purpose of summarizing the actuarial valuation for the Employees' Retirement System of the City, Town, County and the Employees' Retirement System of the City, Town, County Guarantee Trust of the City, Town, County as of January 1, 2016. To the best of our knowledge, the reports summarized herein present fair positions of the funded status of the plan in accordance with the Actuarial Standards of Practice as described by the American Academy of Actuaries, and are based on the plan provisions and assumptions summarized within each report.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such facts as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or other additional cost or contribution requirement based on the plan's funded status); and changes in plan provisions of applicable law. The scope of our assignment did not include an analysis of the potential range of future measurements.

Neither Nyhart nor any of its employees have any relationship with the plan or its sponsor which could impair or appear to impair the objectivity of this report. To the extent that this report or any attachment concerns tax matters, it is not intended to be used and cannot be used by a taxpayer for the purpose of avoiding penalties that may be imposed by law.

The undersigned are compliant with the continuing education requirements of the Qualification Standards for Actuaries Issuing Statements of Actuarial Opinion in the United States.

To our knowledge there have been no significant events prior to the current year's measurement date or as of the date of this report which could materially affect the results contained herein.

Nyhart

David D. Harris, ASA, FCA, EA, MAAA
2000 RiverEdge Parkway, Suite 900
Atlanta, GA 30328
770-405-0755

Heath W. Merlak, FSA, FCA, EA, MAAA
101 West Vandalia Street, Suite 240
Edwardsville, IL 62025
618-307-5523

May 12, 2016
Date

www.nyhart.com

August, 2017

Experience Study for
XYZ Retirement System

Table of Contents

Objectives and Process	1
Certification	3
Summary: Cost Impact of Recommendations	4
Economic Assumptions	
A. Investment Return	5
B. Investment & Non-Investment Expenses	10
C. Annual Rate of Inflation	10
D. Annual Pay Increases	11
Demographic Assumptions	
A. Rates of Retirement	12
B. Rates of Withdrawal	13
C. Rates of Disability	15
D. Rates of Mortality	16
E. Marital Status and Assumed Ages of Spouses	17
Amortization Method	18
Asset Valuation Method	20

Objectives and Process

The primary objectives of this study are to measure the recent experience of the XYZ Retirement System, recommend, as appropriate, a new set of actuarial assumptions to be used starting with the 10/1/2017 valuation, and measure the impact on the plan's liabilities of changing to this new set of assumptions.

We gathered data from valuations spanning 10/1/2011 through 9/30/2016. After utilizing our past valuation data as the six necessary census files, we measured the experience for each of the five years individually. For instance, we determined the withdrawal rates during the period 10/1/2011 – 9/30/2012 by checking to see which members on the 10/1/2011 active file did not appear on the 10/1/2012 active file.

Each of the demographic assumptions analyzed could potentially vary by age or service. We initially looked to see if the structure of the current tables made sense. Did termination rates really differ by age? Did pay increases follow a more predictable pattern when broken down by age or by service? We ultimately concluded that the structures of the current tables were appropriate.

Once satisfied with the structure of the tables, we charted both the current assumption and the recent actual experience. Our recommended assumption set was our attempt to blend the recent experience with both the current assumption and consideration for how things might change in the future, i.e. future expectations of pay increases. Then, we “smoothed” our rates in order to iron out data anomalies.

Finally, we measured the impact on the plan's liabilities of reflecting the recommended assumptions.

There are a few key points to note:

- **Plan provisions remained unchanged.** None of the results of this study have any impact on the actual benefits that will be paid out to participants. This study deals only with the underlying actuarial assumptions and thus only affects the levels and timing of the contributions to the plan.

Objectives and Process

- **Only a small number of exposures were present in this study.** Since the plan did not experience large amounts of exposures or lives for some of the assumptions (mortality, disability, e.g.), recommendations were developed based on the combination of observable results, past studies, and expectations of the Pension Fund, and not just solely on the results of this study.
- **Past experience doesn't necessarily predict future outcomes.** This is most often seen or heard in the investment arena. Just because employees behaved a certain way in the past doesn't mean their behavior will continue unchanged. Outside factors, such as economic conditions, often have a significant impact on behavior.

The actual assumptions that were reviewed are in the following list:

- **Economic**
 - Investment return
 - Investment & non-investment expenses
 - Annual rate of inflation
 - Annual pay increases
- **Demographic**
 - Rates of retirement
 - Rates of withdrawal
 - Rates of disability
 - Rates of mortality
 - Marital status
 - Age difference of spouses
- **Methodology**
 - Amortization of unfunded liability
 - Asset valuation methodology

Please note that not every assumption in this list was examined historically. There are a variety of reasons for not doing so, including materiality in the valuation, lack of historical data, and/or lack of exposures for analysis.

Certification

This report is prepared for the primary purposes of measuring the recent experience of the XYZ Retirement System and recommending reasonable actuarial assumptions to be used in determining the annual funding requirements.

The information presented in this report is based on the information furnished to us by the prior actuary and the Plan Administrator and used in our annual valuations. In our opinion, the assumptions recommended are reasonable and represent a reasonable expectation of future experience under the Pension Fund. All calculations have been made in accordance with generally accepted actuarial principles and practice.

To our knowledge there have been no significant events prior to the current year's measurement date or as of the date of this report which could materially affect the results contained herein.

Neither Nyhart nor any of its employees have any relationship with the plan or its sponsor which could impair or appear to impair the objectivity of this report.

Nyhart

Prepared by:

David D. Harris, ASA, FCA, EA, MAAA

Heath W. Merlak, FSA, EA, MAAA

August 10, 2017

Date

2000 RiverEdge Parkway

Suite 900

Atlanta, GA 30328

770-405-0755

www.nyhart.com

Cost Impact of Recommendations

Actuarial assumptions are intended to be reasonable in the aggregate and to provide for reasonable estimates of the future annual costs of the Pension Fund. Periodic experience studies and annual gain/loss analyses are necessary to ensure such reasonableness, and refinements are suggested when the experience of the plan diverges from those assumptions. Upon review of the experience for the XYZ Retirement System, we have provided the following recommended refinements to the current actuarial assumptions being used for the Board’s consideration. Detail of each recommendation can be found later in this report.

Actuarial Assumption	Refinement	Estimated Change in Liability	Estimated Change to Funded Ratio	Estimated Change in Contribution	Estimated Change to Percent of Pay Contr.
Inflation Rate	Lower inflation rate to 2.75% (along with Option 1) or 2.50% (along with Option 2)	Impacts Interest Rate and Salary Scale below			
Interest Rate	Option 1: Lower interest rate to 7.75%	\$12,271,000	(2.6%)	\$1,251,000	3.6%
	Option 2: Lower interest rate to 7.50%	\$25,154,000	(5.1%)	\$2,526,000	7.2%
Expenses	No change recommended				
Salary Scale	No change recommended				
Retirement Rates	Change to rates	\$93,000	0.0%	\$12,000	0.0%
Withdrawal Rates	Changes to rates	\$1,633,000	(0.3%)	\$543,000	1.5%
Disability Rates	No change recommended				
Amortization	Lower amortization period from 30 years to 25 years (10/1/2016)			\$89,000	0.3%
Asset Method	No change recommended				
Total	Option 1: All recommended changes at 7.75% interest rate	\$14,027,000	(2.9%)	\$1,990,000	5.7%
	Option 2: All recommended changes at 7.50% interest rate	\$26,922,000	(5.4%)	\$3,364,000	9.6%

Economic Assumptions

A. Investment Return

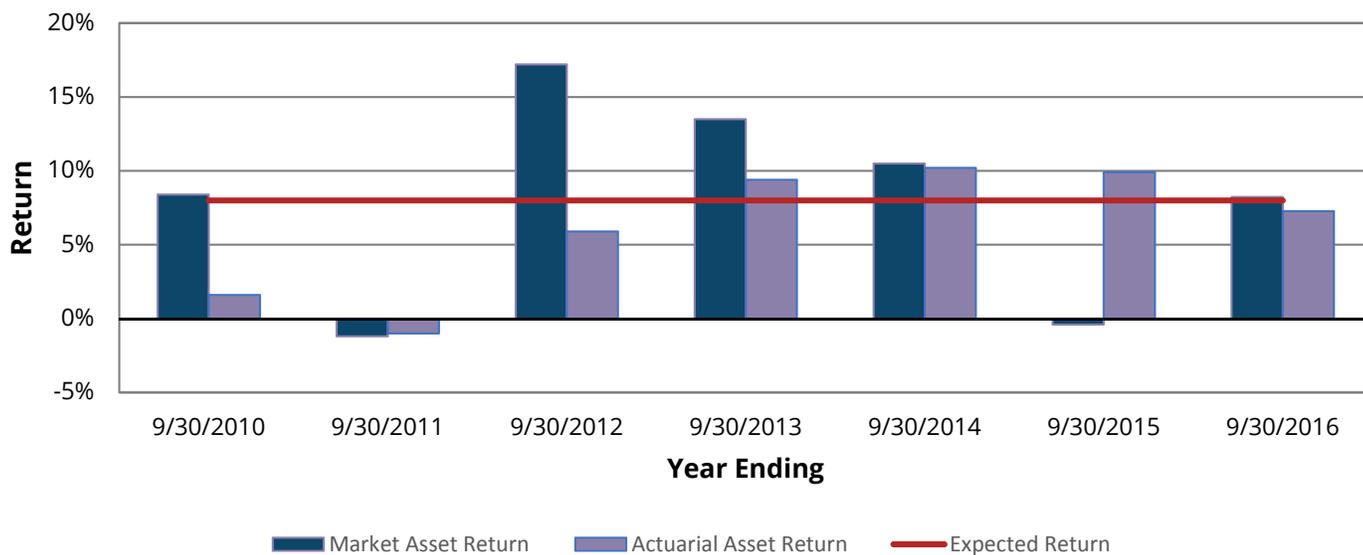
The assumption that has the largest impact on pension liabilities is the interest rate used to discount benefit liabilities. The interest rate should be set at the expected long-term (30+ years) rate of return of the pension assets. Our review of this assumption consists of the following:

Historical review

The graph and table below shows historical rates of return of the Pension Fund trust fund since 2010. While historical performance doesn't guarantee future returns, it is useful for seeing overall trends. The 7-year average based on the actuarial value rate of return for the period ending September 30, 2016 is below the expected return used for the valuation.

The market value rate of return is based on annual market values with adjustments for cash inflows and outflows. The actuarial value rate of return is based on the annual smoothed actuarial values of assets adjusted for cash inflows and outflows.

Asset Return Experience

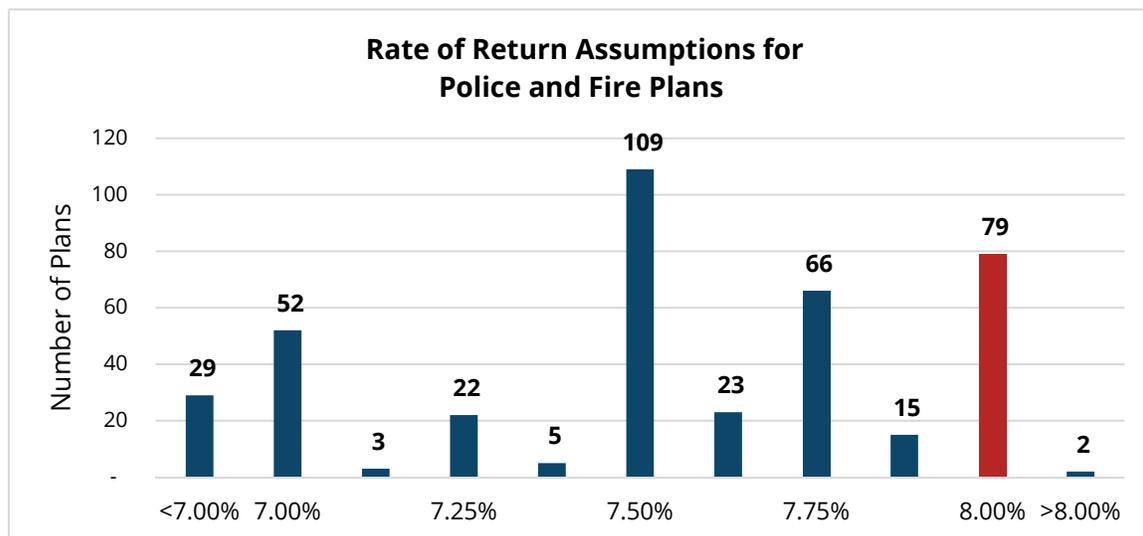


Economic Assumptions

Fiscal Year Ending September 30	Actuarial Asset Basis	Market Value Basis
2010	1.60%	8.40%
2011	(1.00%)	(1.20)%
2012	5.90%	17.20%
2013	9.40%	13.50%
2014	10.20%	10.50%
2015	9.90%	(0.40)%
2016	7.28%	8.23%
Averages		
5 Years	8.52%	9.64%
7 Years	6.10%	7.85%

Peer Comparison

The National Association of State Retirement Administrators (NASRA) published its “Issue Brief: Public Pension Fund Plan Investment Return Assumptions” (February, 2017). Based on its survey of 127 State Pension Fund plans, the average return assumption as of December 31, 2016 was 7.52% with nearly 82% of survey respondents falling below 8.00%. Nearly three-fourths have reduced their return assumption since 2010. In XYZ, the Department of Management Services reported the return rates for police and fire plans with valuation dates of 9/30/2015 to 1/1/2016. The following chart shows the average return assumptions for the police and fire plans.



Economic Assumptions

Although the NASRA study does not provide any indication of projected changes to investment returns, the results provide evidence that the current rate used for the Pension Fund falls near the top of a reasonable range.

Future expectations

Pension Fund plans are long-term obligations; as such, the investment horizon should be 30 to 50 years, a much longer time period than most people care to make predictions. Regardless, shorter-term predictions do provide guidance in terms of future expectations in comparison to past results.

Economic Assumptions

The following asset allocation information from the 2017 Morgan Stanley Forecast shows the basis of the total expected return. Based on the Fund's targeted asset mix, the expected annual return after taking into account inflation is 5.10% over the next 7 years and 7.82% over the next 20 years.

Asset Mix	Target	Expected 7 year Real Return	Expected 20 year Real Return
<u>Traditional Asset Classes</u>			
Equity Managers			
Large capitalization value manager	21.50%	2.55%	6.15%
Large capitalization growth manager	21.50%	1.85%	6.15%
Small/mid capitalization value manager	5.00%	3.20%	7.00%
Mid capitalization growth manager	5.00%	2.15%	6.75%
International value manager	6.00%	3.55%	5.95%
International growth manager	<u>6.00%</u>	<u>3.55%</u>	<u>5.95%</u>
Total Equity	65.00%	2.52%	6.23%
Fixed Income Managers	20.00%	0.25%	2.15%
Total Traditional Asset Classes	85.00%	1.97%	5.25%
<u>Alternative Asset Classes</u>			
Private Real Estate	7.00%	4.05%	3.75%
Hedge fund of funds	3.00%	1.35%	2.75%
Master Limited Partnerships	<u>5.00%</u>	<u>7.05%</u>	<u>5.25%</u>
Total Alternative Asset Classes	15.00%	4.51%	4.05%
Total Traditional & Alternative	100.00%	2.35%	5.07%
Expected Inflation		2.75%	2.75%
Total Expected Return		5.10%	7.82%

Economic Assumptions

Recommendation

The current interest rate assumption at October 1, 2016, is 8.00%. Based on the past experience of the pension plan and future expectations of market returns and long-term inflation, we recommend an interest rate in the range of 7.25% - 7.75%. Therefore, we are recommending lowering the interest rate assumption to at most 7.75%.

Since changing the interest rate assumption can be impactful to costs, there are two common approaches to spread the cost increase over a few years to allow for better planning and preparation. The direct-rate smoothing technique phases in the increased contribution requirements over several years. Under a direct-rate smoothing technique, the fund immediately recognizes the impact on liabilities of the interest rate change; however, the resulting impact on contribution requirements is phased-in over a period of years (generally 3-5), allowing for better planning and preparation for the increase in costs.

The second method is the step-rate methodology where you lower the interest rate each year in a step-rate fashion until the ultimate rate is reached. Under the step-rate approach, you gradually recognize both the liability impact and the contribution impact. Under direct rate smoothing, you immediately recognize the liability impact of your "best guess" regarding the ultimate rate but phase-in recognition of increased contribution requirements.

Economic Assumptions

B. Investment & Non-Investment Expenses

The current assumptions use an expected rate of return that is net of investment expenses. Consequently, there is no assumption for investment expenses. Based on this current policy, there is no need for a historical analysis of the investment expenses. The plan will continue to operate using a net of expenses investment return assumption.

The contribution is increased by anticipated administrative expenses, equal to the average of the prior four years of administrative expenses. The 7-year history is provided below with an average of \$177,643. We do not recommend any changes to this assumption.

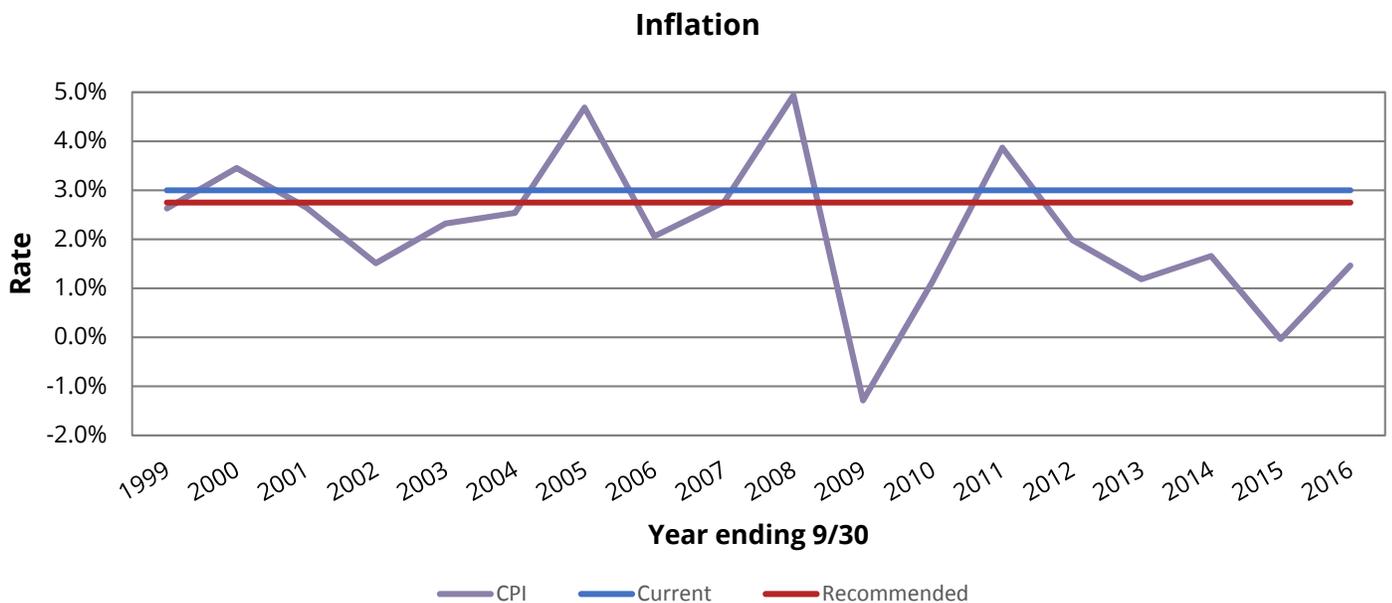
FYE 9/30	Administrative Expenses	FYE 9/30	Administrative Expenses
2010	\$64,100	2014	\$105,400
2011	\$548,800	2015	\$132,000
2012	\$219,000	2016	\$62,700
2013	\$111,500		

C. Annual Rate of Inflation (CPI)

The annual rate of inflation assumption is not used directly in any of the actuarial valuation procedures. There is, however, an implicit rate of inflation in the assumed wage growth and expected return on assets. It is important to ensure that these assumptions all fit together and achieve the same implicit inflation rate.

Inflation, as measured by the CPI, has increased by an average of 1.96% during the five-year period of the experience study. The Federal Reserve of Cleveland prepared a news release on June 14, 2017 estimating an average inflation rate of 1.73% over the next 10 years. We recommend lowering the long-term inflation assumption in the plan to 2.50% or 2.75% from 3.00%. This revised assumption for inflation of would be in conjunction with lowering the interest rate used to value plan liabilities.

Economic Assumptions



D. Annual Pay Increases

To examine the historical experience of pay increases, data from 2011 to 2016 was studied. Salaries during this time were consistent year-over-year and also were slightly above expectations. The current salary assumption consists of increases due to a 3.00% inflation assumption and a seniority/merit table based on age. Even with a decreasing inflationary environment, we feel the rates can remain at their current levels.

The following table displays the experienced salary increases, as well as the current and recommended assumption incorporating the current (3.00%) and recommended (2.75%) inflation assumption.

Age	2011-2016 Actual Experience	2014-2016 Actual Experience	Current Assumption	Recommended Assumption
20	10.1%	11.6%	8.0%	8.0%
25	8.2%	9.2%	8.0%	8.0%
30	8.2%	9.4%	7.5%	7.5%
35	7.2%	7.3%	6.5%	6.5%
40	5.8%	7.1%	5.5%	5.5%
45	5.6%	6.7%	5.0%	5.0%
50	6.1%	5.6%	4.5%	4.5%
55+	5.4%	5.4%	4.5%	4.5%

Demographic Assumptions

A. Rates of Retirement

Retirements over the period 2011-2016 were examined based on eligibility. The number of exposures for this period were 58 participants. The current rates are split for participants by age and service as shown in the table below. Prior to 55, retirement is assumed to be service based with 66% retirement at 25 years and 25% after 25 years of service. At age 55 with less than 25 years of service, 75% of participants are expected to retire. After age 55 and 25 years of service, participants are assumed to retire immediately.

The current assumption does not account for those who elect early retirement. We propose adding a 25% retirement assumption for those between ages 50 and 55 with 10 years of service. We also recommend increasing the retirement assumption at 25 years of service to 75%. These change more closely aligns the expected retirements to actual in total.

Retirement				
Age	Service	Actual Experience	Current Rates	Recommended Assumption
Ages 50 to 54	Under 25 Years	33%	0%	25%
Under 55	25 Years	86%	66%	75%
Under 55	Over 25 Years	29%	25%	25%
Age 55	Under 25 Years	0%	75%	75%
Over Age 55	Under 25 Years	19%	25%	25%
Age 55 and Over	25 Years and Over	45%	100%	100%

The impact on the number of assumed retirements is reflected in the table and graph below:

Actual Experience	Expected (Current Assumptions)	Expected (Recommended Assumptions)
107	73.15	99.25

The impact on annual cost of proposed changes to retirement rates is an increase of approximately \$12,000.

Demographic Assumptions

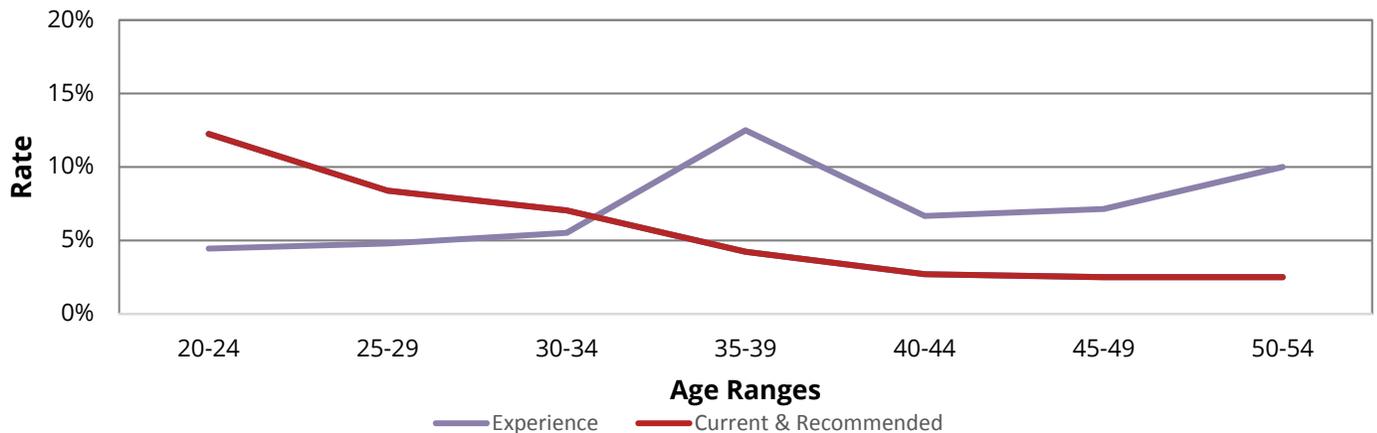
B. Rates of Withdrawal

Withdrawal or termination rates were also studied. This assumption is applicable to people that are not yet eligible to retire. The assumption forecasts the rates at which people will leave prior to becoming eligible for normal retirement. The current termination rates are based on age.

The current experience from 2011 to 2016 differed enough from the expectation to warrant a slight change to the assumption with 73 actual terminations to the expected 102.2. We recommend adding a service component to the termination rates instead of only varying the termination rates by age. We then recommend lowering the termination rates by 30% for participants with 7 or more years of service, who have become partially vested.

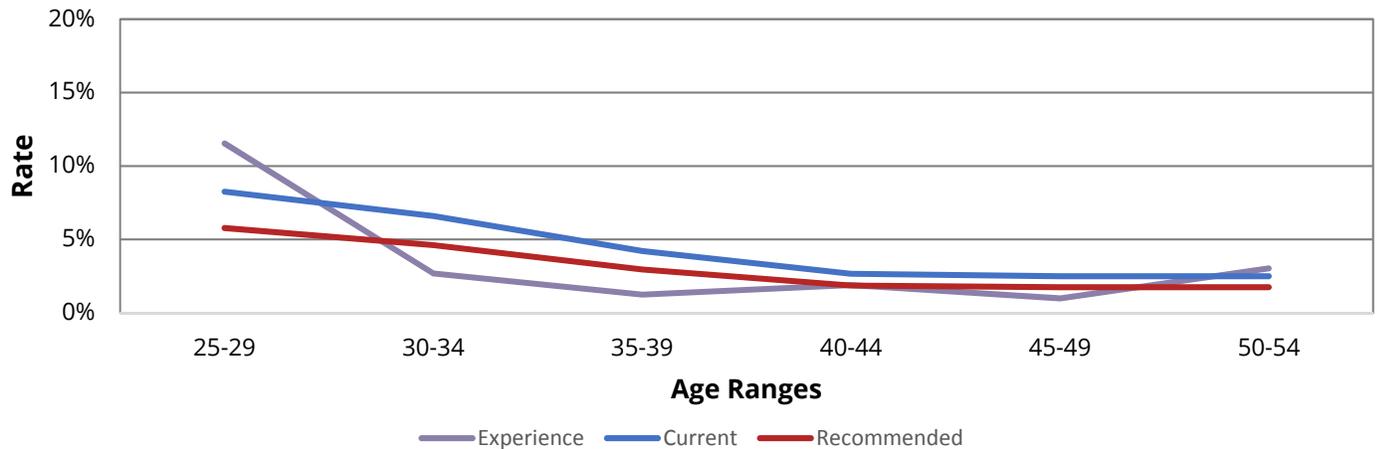
Service	Actual Experience	Expected (Current Assumptions)	Expected (Recommended Assumptions)
Less than 7 Years	50	54.8	54.8
7 Years or More	23	47.4	33.2

Withdrawal Experience: Less than 7 Years of Service



Demographic Assumptions

Withdrawal Experience: 7+ Years of Service



Withdrawal

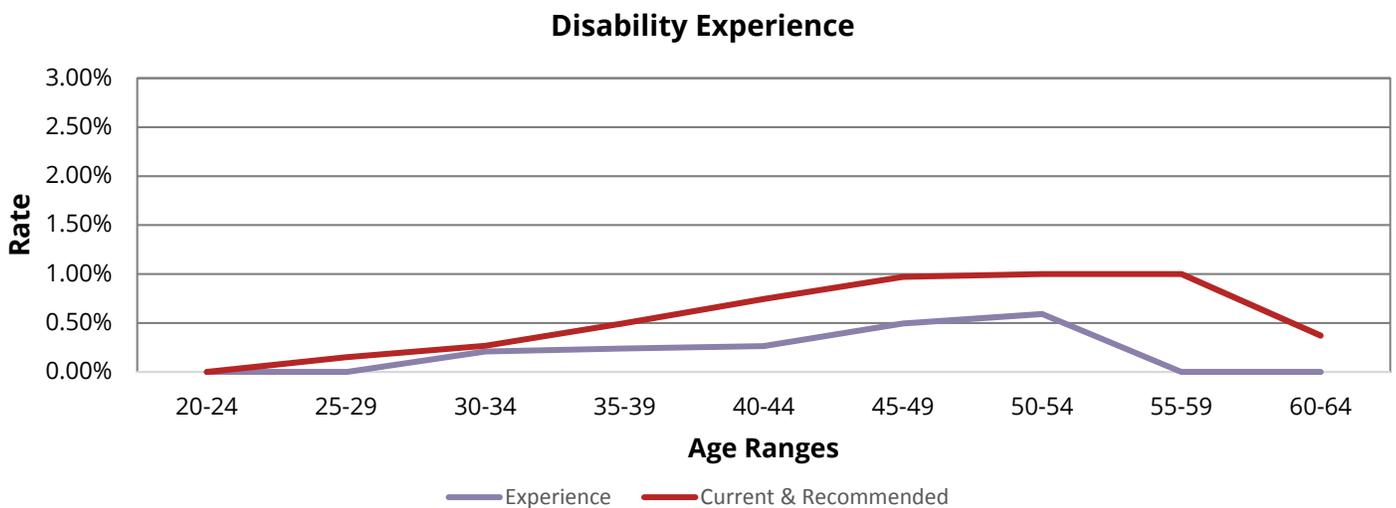
Age	Actual Experience < 7 Years of Service	Actual Experience 7+ Years of Service	Current Rates	Recommended Assumption < 7 Years of Service	Recommended Assumption 7+ Years of Service
20-24	4.4%	0.0%	15.0%	15.0%	10.50%
25-29	4.8%	11.5%	8.5%	8.5%	5.95%
30-34	5.5%	2.7%	7.0%	7.0%	4.90%
35-39	12.5%	1.2%	4.0%	4.0%	2.80%
40-44	6.7%	1.9%	2.5%	2.5%	1.75%
45-49	7.1%	1.0%	2.5%	2.5%	1.75%
50-54	10.0%	3.0%	2.5%	2.5%	1.75%

The impact on annual cost of proposed changes to termination rates is an increase of approximately \$543,000.

Demographic Assumptions

C. Rates of Disability

Based on the 2011-2016 experience, 6 individuals were designated as becoming disabled versus the expectation of 15.9. Due to the rare case of disability and since disability makes up less than 1.5% of the overall liability, we do not recommend any change to the current disability rate assumption. Changing these rates would have little significance on the Plan's annual cost.



Demographic Assumptions

D. Rates of Mortality

In order to perform an actual experience study on mortality, an extremely large number of exposures is required. Since the amount of data is not available for the Pension Fund, it is standard actuarial practice to rely on national tables created by organizations like the Society of Actuaries. The key to the mortality assumption is to continually update this assumption as new studies are released. We believe reflecting future mortality improvements is prudent and should help avoid large impacts to plan costs as new studies are released.

Recent State of XYZ legislation (HB XXXX) requires that plans use the same mortality tables as used by the XYZ Retirement Pension Fund (XYZRS). The legislation has an effective date of January 1, 2016. The mortality tables used by the FRS were adopted for the October 1, 2016 valuation. The current assumption is the RP-2000 Generational, 100% Annuitant White Collar, Scale BB for Females, and the RP-2000 Generational, 50% Annuitant White Collar/50% Annuitant Blue Collar, Scale BB for Males.

If FRS adopts a new mortality table in future years, the Division of Retirement will mandate the XYZ Retirement System adopt the new table within two years. We will monitor any regulations or changes to the FRS assumption going forward.

The impact of moving to the FRS mortality tables¹ was an increase in annual costs of approximately \$1,065,000.

¹ FRS uses separate mortality tables for "Special Risk" and "other than Special Risk." For purposes of our analysis, we have used the "Special Risk" tables.

Demographic Assumptions

E. Marital Status and Assumed Ages of Spouses

Currently, 85% of active members are assumed to be married, and female spouses are assumed to be three years younger. We do not recommend any changes to these assumptions.

Amortization Method

The current amortization method is a level payroll 30-year closed amortization with a 1.6% payroll assumption, as limited by the ten-year average historical growth in payroll.

In recent years, the trend has been to lower amortization periods. The Conference of Consulting Actuaries (CCA) released a White Paper in October 2014² indicating the “best practice” approach is to use a shorter amortization period (e.g. no more than 25 years) as a level percent of pay. The Conference of Consulting Actuaries Best Practices “White Paper” found the ideal amortization period to be between 15 and 20 years. Amortization periods less than 15 years gave Plans too little volatility control and consistency in contributions amounts. Periods longer than 20 years are typically longer than either average future service for actives or average life expectancy for retirees. As of October 31, 2016 the average future service for actives was 9.73 years, the average life expectancy for inactives was 22.09 years, and the average life expectancy for the total population was 29.02 years. Below is a table of what the CCA consider to be “Model Practice”.

CCA Model Practice

Source	Period
Plan Amendments	Lesser of expected future service or 15 years
Experience Gain/Loss	15 to 20 years
Assumption or Method Changes	15 to 25 years

Based on the recommendations of the CCA and the plan demographics we recommend moving to a shorter amortization period. Lowering the amortization period would allow the Plan to recognize the Unfunded Actuarial Accrued Liability more quickly, resulting in a better funded plan.

Under XYZ Statute 11.264(5)(b), the payroll growth assumption cannot exceed the annual average growth rate for the 10-year period preceding the valuation date. Due to this Statute, the payroll growth assumption is set at 1.6%. The following is a history of the payroll growths for the past 10 years.

² “Actuarial Funding Policies and Practices for Public Pension Fund Plans”, Conference of Consulting Actuaries Public Plans Community, October 2014.

Amortization Method

Year Ending	Actual Growth	Payroll Assumed	Year Ending	Actual Growth	Payroll Assumed
2007	1.7%	5.7%	2012	(3.4)%	2.0%
2008	3.9%	6.0%	2013	5.1%	1.9%
2009	5.9%	5.9%	2014	(0.9)%	4.0%
2010	(6.3)%	6.0%	2015	0.5%	4.0%
2011	(3.1)%	2.0%	2016	13.0%	6.0%

We recommend lowering the current amortization method to a level payroll 25-year closed amortization with a 1.6% payroll assumption, as limited by the ten-year average historical growth in payroll. The impact on annual cost of lowering the amortization period is an increase of approximately \$89,000.

Asset Valuation Method

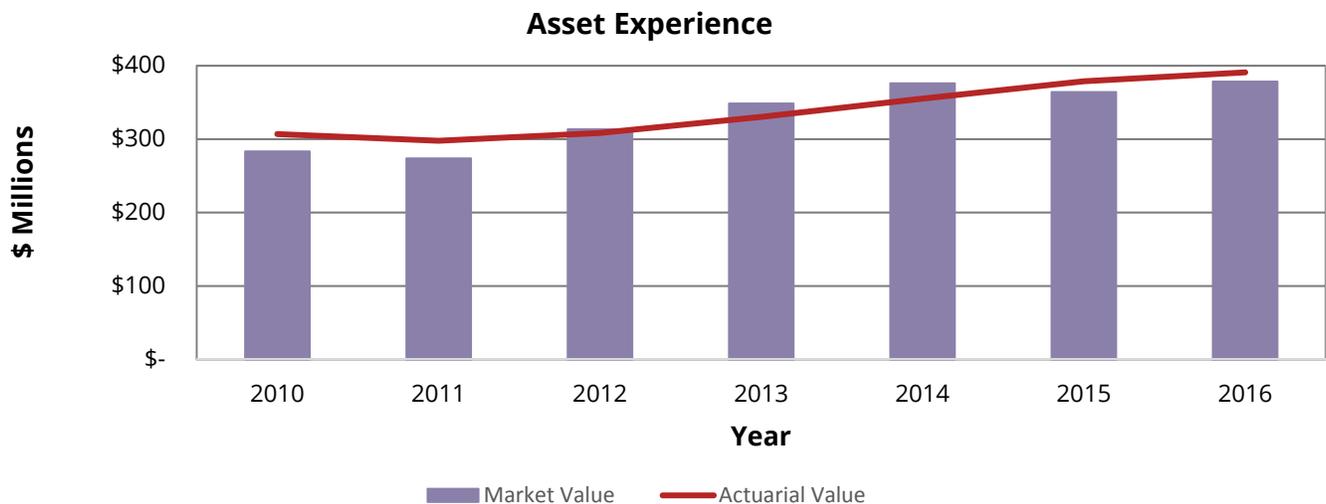
The Actuarial Value of Assets is determined using a method that spreads over a period of four years the difference between the actual investment income and the expected income (based on the valuation interest rate applied to the prior year's market value of assets). The actuarial value of assets is required to be at least 80%, but no more than 120%, of the market value.

Under the Actuarial Standards of Practice (ASOP) No. 44, an asset method other than market value should have the following qualities:

- Likely to produce actuarial value of assets sometimes greater and sometimes less than market value
- Fall within a reasonable range around the market value
- Differences recognized within a reasonable period of time
- No significant bias

The method used for the fund meets all of these objectives. We do not recommend any changes to the asset valuation method.

The following chart compares the historical market value of assets to the actuarial value of assets.





GASB 75 ACTUARIAL VALUATION

Fiscal Year Ending June 30, 2017

PLAN SPONSOR NAME

CONTACT

Randy Gomez FSA, FCA, MAAA
randy.gomez@nyhart.com

ADDRESS

Nyhart
8415 Allison Pointe Blvd. Suite 300
Indianapolis, IN 46250

PHONE

General (317) 845-3500
Toll-Free (800) 428-7106
Fax (317) 845-3654

Table of Contents

	Page
Certification	1
Executive Summary	3
GASB Disclosures	
Schedule of Changes in Net OPEB Liability and Related Ratios	5
OPEB Expense	6
Deferred Outflows / (Inflows) of Resources	7
Sensitivity Results	8
Projection of GASB Disclosures	9
Cash Flow Projection	10
Discussion of Discount Rates	11
Summary of Plan Participants	12
Substantive Plan Provisions	15
Actuarial Methods and Assumptions	17
Appendix	
GASB Results by Group	24
Comparison of Participant Demographic Information	25
Detailed Actuary's Notes	26
Summary of Medical Benefits	27
Glossary	
Decrements Exhibit	29
Retirement Rates Exhibit	30
Definitions	31



January 12, 2018

Contact Person

Plan Sponsor Name

123 N. Main St.

Anywhere, IN 00000

This report summarizes the GASB actuarial valuation for the Plan Sponsor 2016/17 fiscal year. To the best of our knowledge, the report presents a fair position of the funded status of the plan in accordance with GASB Statement No. 75 (Accounting and Financial Reporting by Employers for Post-Employment Benefits Other Than Pensions).

The information presented herein is based on the actuarial assumptions and substantive plan provisions summarized in this report and participant information furnished to us by the Plan Sponsor. We have reviewed the employee census provided by the Plan Sponsor for reasonableness when compared to the prior information provided but have not audited the information at the source, and therefore do not accept responsibility for the accuracy or the completeness of the data on which the information is based. When relevant data may be missing, we may have made assumptions we feel are neutral or conservative to the purpose of the measurement. We are not aware of any significant issues with and have relied on the data provided.

The discount rate, other economic assumptions, and demographic assumptions have been selected by the Plan Sponsor with the concurrence of Nyhart. In our opinion, the actuarial assumptions are individually reasonable and in combination represent our estimate of anticipated experience of the Plan. All calculations have been made in accordance with generally accepted actuarial principles and practice.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following:

- plan experience differing from that anticipated by the economic or demographic assumptions;
- changes in economic or demographic assumptions;
- increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period); and
- changes in plan provisions or applicable law.

We did not perform an analysis of the potential range of future measurements due to the limited scope of our engagement.

To our knowledge, there have been no significant events prior to the current year's measurement date or as of the date of this report that could materially affect the results contained herein.



Neither Nyhart nor any of its employees has any relationship with the plan or its sponsor that could impair or appear to impair the objectivity of this report. Our professional work is in full compliance with the American Academy of Actuaries "Code of Professional Conduct" Precept 7 regarding conflict of interest. The undersigned meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

Should you have any questions please do not hesitate to contact us.

Randy Gomez, FSA, MAAA
Consulting Actuary

Suraj Datta, ASA, MAAA
Valuation Actuary

Executive Summary

Plan Sponsor GASB 75 Valuation for Fiscal Year Ending June 30, 2017

Summary of Results

Presented below is the summary of GASB 75 results for the fiscal year ending June 30, 2016 compared to the prior fiscal years as shown in the Plan Sponsor's Notes to Financial Statement.

	As of June 30, 2016		As of June 30, 2017	
Total OPEB Liability	\$	1,004,194	\$	737,647
Actuarial Value of Assets	\$	0	\$	0
Net OPEB Liability	\$	1,004,194	\$	737,647
Funded Ratio		0.0%		0.0%

	FY 2015/16		FY 2016/17	
OPEB Expense	\$	103,435	\$	(82,230)
Annual Employer Contribution	\$	97,280	\$	69,679

	As of June 30, 2016		As of June 30, 2017	
Discount Rate		2.92%		3.56%
Expected Return on Assets		N/A		N/A

	As of June 30, 2016		As of June 30, 2017	
Total Active Participants		377		377
Total Retiree Participants		9		9

The active participants' number above may include active employees who currently have no health care coverage. Refer to Summary of Participants section for an accurate breakdown of active employees with and without coverage.

Executive Summary

Plan Sponsor GASB 75 Valuation for Fiscal Year Ending June 30, 2017

Below is a breakdown of total GASB 75 liabilities allocated to past and current service compared to the prior year. The table below also provides a breakdown of the Total OPEB Liability allocated to pre and post Medicare eligibility. The liability shown below includes explicit (if any) and implicit subsidies. Refer to the Substantive Plan Provisions section for complete information on the Plan Sponsor's GASB subsidies.

Present Value of Future Benefits	As of June 30, 2016		As of June 30, 2017	
Active Employees	\$	2,049,971	\$	1,520,188
Retired Employees		176,468		95,930
Total Present Value of Future Benefits	\$	2,226,439	\$	1,616,118

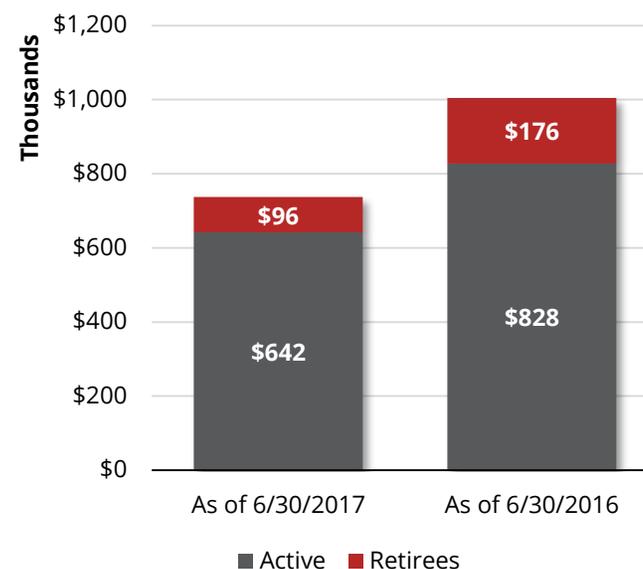
Total OPEB Liability	As of June 30, 2016		As of June 30, 2017	
Active Pre-Medicare	\$	827,726	\$	641,717
Active Post-Medicare		0		0
Active Liability	\$	827,726	\$	641,717

Retiree Pre-Medicare	\$	176,468	\$	95,930
Retiree Post-Medicare		0		0
Retiree Liability	\$	176,468	\$	95,930

Total OPEB Liability	\$	1,004,194	\$	737,647
-----------------------------	-----------	------------------	-----------	----------------

	As of June 30, 2016		As of June 30, 2017	
Discount Rate		2.92%		3.56%

Changes in Total OPEB Liability



Present Value of Future Benefits (PVFB) is the amount needed as of June 30, 2016 and 2017, to fully fund the Plan Sponsor's retiree health care subsidies for existing and future retirees and their dependents assuming all actuarial assumptions are met.

Total OPEB Liability is the portion of PVFB considered to be accrued or earned as of June 30, 2016 and 2017. This amount is a required disclosure in the Required Supplementary Information section.

GASB Disclosures

Plan Sponsor GASB 75 Valuation for Fiscal Year Ending June 30, 2017

Schedule of Changes in Net OPEB Liability and Related Ratios

OPEB Liability	FY 2016/17	FY 2015/16
Total OPEB Liability		
Total OPEB liability – beginning of year	\$ 1,004,194	\$ 999,244
Service cost	91,986	65,526
Interest	28,312	38,043
Changes of benefit terms	(189,790)	0
Changes in assumptions	(37,819)	283,416
Differences between expected and actual experience	(89,557)	(284,755)
Benefit payments	(69,679)	(97,280)
Net change in total OPEB liability	\$ (266,547)	\$ 4,950
Total OPEB liability – end of year	\$ 737,647	\$ 1,004,194
Plan Fiduciary Net Position		
Plan fiduciary net position – beginning of year	\$ 0	\$ 0
Contributions – employer	69,679	97,280
Contributions – active employees	0	0
Net investment income	0	0
Benefit payments	(69,679)	(97,280)
Trust administrative expenses	0	0
Net change in plan fiduciary net position	\$ 0	\$ 0
Plan fiduciary net position – end of year	\$ 0	\$ 0
Net OPEB Liability – end of year	\$ 737,647	\$ 1,004,194
Plan fiduciary net position as % of total OPEB liability	0.0%	0.0%
Covered employee payroll	\$ 19,585,779	\$ 19,015,319
Net OPEB liability as % of covered payroll	3.8%	5.3%

GASB Disclosures

Plan Sponsor GASB 75 Valuation for Fiscal Year Ending June 30, 2017

OPEB Expense

OPEB Expense	FY 2016/17	FY 2015/16
Discount rate as of beginning of fiscal year	2.92%	4.00%
Discount rate as of end of fiscal year	3.56%	2.92%
Service cost	\$ 91,986	\$ 65,526
Interest	28,312	38,043
Changes of benefit terms	(189,790)	0
Projected earnings on OPEB plan investments	0	0
Reduction for contributions from active employees	0	0
OPEB plan administrative expenses	0	0
Current period recognition of deferred outflows / (inflows) of resources		
Differences between expected and actual experience	\$ (8,956)	\$ (28,476)
Changes in assumptions	(3,782)	28,342
Net difference between projected and actual earnings on OPEB plan investments	0	0
Total current period recognition	\$ (12,738)	\$ (134)
Total OPEB expense	\$ (82,230)	\$ 103,435

GASB Disclosures

Plan Sponsor GASB 75 Valuation for Fiscal Year Ending June 30, 2017

Deferred Outflows / (Inflows) of Resources

Deferred Outflows / (Inflows) of Resources represents the following items that have not been recognized in the OPEB Expense:

1. Differences between expected and actual experience of the OPEB plan
2. Changes of assumptions
3. Difference between projected and actual earnings in OPEB plan investments

The initial amortization period for the first two items noted above is based on the average future service to retirement while the difference between projected and actual earnings in OPEB plan investment is amortized over five years. All balances are amortized linearly on a principal only basis and new bases will be created annually for each of the item above.

Differences between expected and actual experience for FYE	Initial Balance	Initial Amortization Period	Annual Recognition	Unamortized Balance as of June 30, 2017
June 30, 2016	\$ (284,755)	10	\$ (28,476)	\$ (227,803)
June 30, 2017	\$ (89,557)	10	\$ (8,956)	\$ (80,601)

Changes in assumptions for FYE	Initial Balance	Initial Amortization Period	Annual Recognition	Unamortized Balance as of June 30, 2017
June 30, 2016	\$ 283,416	10	\$ 28,342	\$ 226,732
June 30, 2017	\$ (37,819)	10	\$ (3,782)	\$ (34,037)

As of fiscal year ending June 30, 2017	Deferred Outflows	Deferred Inflows
Differences between expected and actual experience	\$ 0	\$ (308,404)
Changes in assumptions	192,695	0
Net difference between projected and actual earnings in OPEB plan investments	N/A	N/A
Total	\$ 192,695	\$ (308,404)

GASB Disclosures

Plan Sponsor GASB 75 Valuation for Fiscal Year Ending June 30, 2017

Deferred Outflows / (Inflows) of Resources – Continued

Annual Amortization of Deferred Outflows / (Inflows)

The balances of June 30, 2017 of the deferred outflows / (inflows) of resources will be recognized in OPEB expense in the future fiscal years as noted below.

FYE	Balance
2018	\$ (12,872)
2019	\$ (12,872)
2020	\$ (12,872)
2021	\$ (12,872)
2022	\$ (12,872)
Thereafter	\$ (51,349)

Sensitivity Results

The following presents the net OPEB liability as of June 30, 2017, calculated using the discount rate assumed and what it would be using a 1% higher and 1% lower discount rate.

- The current discount rate is 3.56%.
- The 1% decrease in discount rate would be 2.56%.
- The 1% increase in discount rate would be 4.56%.

As of June 30, 2017	Net OPEB Liability
1% Decrease	\$ 797,450
Current Discount Rate	\$ 737,647
1% Increase	\$ 681,940

The following presents the net OPEB liability as of June 30, 2017, using the health care trend rates assumed and what it would be using 1% higher and 1% lower health care trend rates.

- The current health care trend rate starts at an initial rate of 9.0% decreasing by 0.5% annually to an ultimate rate of 5.0%.
- The 1% decrease in health care trend rates would assume an initial rate of 8.0% decreasing by 0.5% annually to an ultimate rate of 4.0%.
- The 1% increase in health care trend rates would assume an initial rate of 10.0% decreasing by 0.5% annually to an ultimate rate of 6.0%.

As of June 30, 2017	Net OPEB Liability
1% Decrease	\$ 645,226
Current Health Care Trend Rates	\$ 737,647
1% Increase	\$ 848,090

Projection of GASB Disclosures

Plan Sponsor GASB 75 Valuation for Fiscal Year Ending June 30, 2017

The Total OPEB Liability (TOL) is expected to change on an annual basis as a result of expected and unexpected events. Under normal circumstances, it is generally expected to have a net increase each year. Below is a list of the most common events affecting the total OPEB liability and whether they increase or decrease the liability.

Expected Events

- Increases in TOL due to additional benefit accruals as employees continue to earn service each year
- Increases in TOL due to interest as the employees and retirees age
- Decreases in TOL due to benefit payments

Unexpected Events

- Increases in TOL when actual premium rates increase more than expected. A liability decrease occurs if the reverse happens.
- Increases in TOL when more new retirements occur than expected or fewer terminations occur than anticipated. Liability decreases occur when the opposite outcomes happen.
- Increases or decreases in TOL depending on whether benefits are improved or reduced.

Projection of Total OPEB Liability (TOL)		FY 2016/17		FY 2017/18
TOL as of beginning of year	\$	1,004,194	\$	737,647
Normal cost as of beginning of year		89,376		66,898
Exp. benefit payments during the year		(97,280)		(42,281)
Interest adjustment to end of year		30,522		27,896
Exp. TOL as of end of year	\$	1,026,812	\$	790,160
Actuarial Loss/(Gain)		(289,165)		TBD
Actual TOL as of end of year	\$	737,647	\$	TBD

Discount rate as of beginning of year	4.00%	2.92%
Discount rate as of end of year	2.92%	3.56%

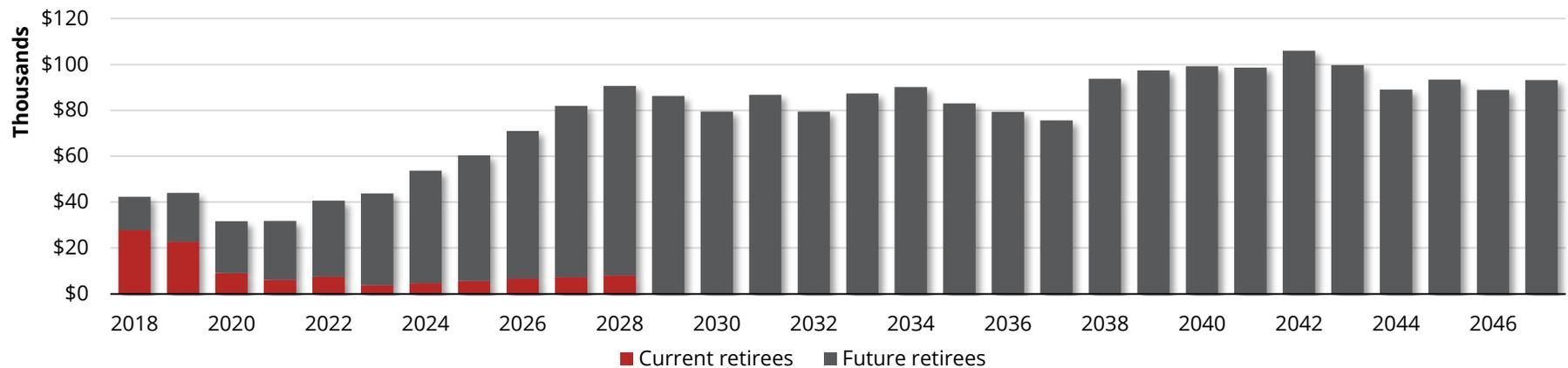
Cash Flow Projections

Plan Sponsor GASB 75 Valuation for Fiscal Year Ending June 30, 2017

The below projections show the actuarially estimated employer-paid contributions for retiree health benefits for the next thirty years. Results are shown separately for a closed group of current / future retirees. These projections include explicit and implicit subsidies.

FYE	Current Retirees	Future Retirees ¹	Total	FYE	Current Retirees	Future Retirees ³	Total	FYE	Current Retirees	Future Retirees ³	Total
2018	\$ 27,739	\$ 14,542	\$ 42,281	2028	\$ 8,100	\$ 82,542	\$ 90,642	2038	\$ 0	\$ 93,753	\$ 93,753
2019	\$ 22,849	\$ 21,157	\$ 44,006	2029	\$ 0	\$ 86,301	\$ 86,301	2039	\$ 0	\$ 97,368	\$ 97,368
2020	\$ 8,990	\$ 22,695	\$ 31,685	2030	\$ 0	\$ 79,502	\$ 79,502	2040	\$ 0	\$ 99,273	\$ 99,273
2021	\$ 6,186	\$ 25,617	\$ 31,803	2031	\$ 0	\$ 86,737	\$ 86,737	2041	\$ 0	\$ 98,669	\$ 98,669
2022	\$ 7,462	\$ 33,170	\$ 40,632	2032	\$ 0	\$ 79,490	\$ 79,490	2042	\$ 0	\$ 105,941	\$ 105,941
2023	\$ 3,774	\$ 39,980	\$ 43,754	2033	\$ 0	\$ 87,368	\$ 87,368	2043	\$ 0	\$ 99,749	\$ 99,749
2024	\$ 4,651	\$ 49,000	\$ 53,651	2034	\$ 0	\$ 90,164	\$ 90,164	2044	\$ 0	\$ 89,110	\$ 89,110
2025	\$ 5,589	\$ 54,777	\$ 60,366	2035	\$ 0	\$ 83,016	\$ 83,016	2045	\$ 0	\$ 93,408	\$ 93,408
2026	\$ 6,621	\$ 64,392	\$ 71,013	2036	\$ 0	\$ 79,404	\$ 79,404	2046	\$ 0	\$ 88,880	\$ 88,880
2027	\$ 7,333	\$ 74,605	\$ 81,938	2037	\$ 0	\$ 75,624	\$ 75,624	2047	\$ 0	\$ 93,218	\$ 93,218

Projected Employer Pay-go Cost



¹ Projections for future retirees do not take into account future new hires.

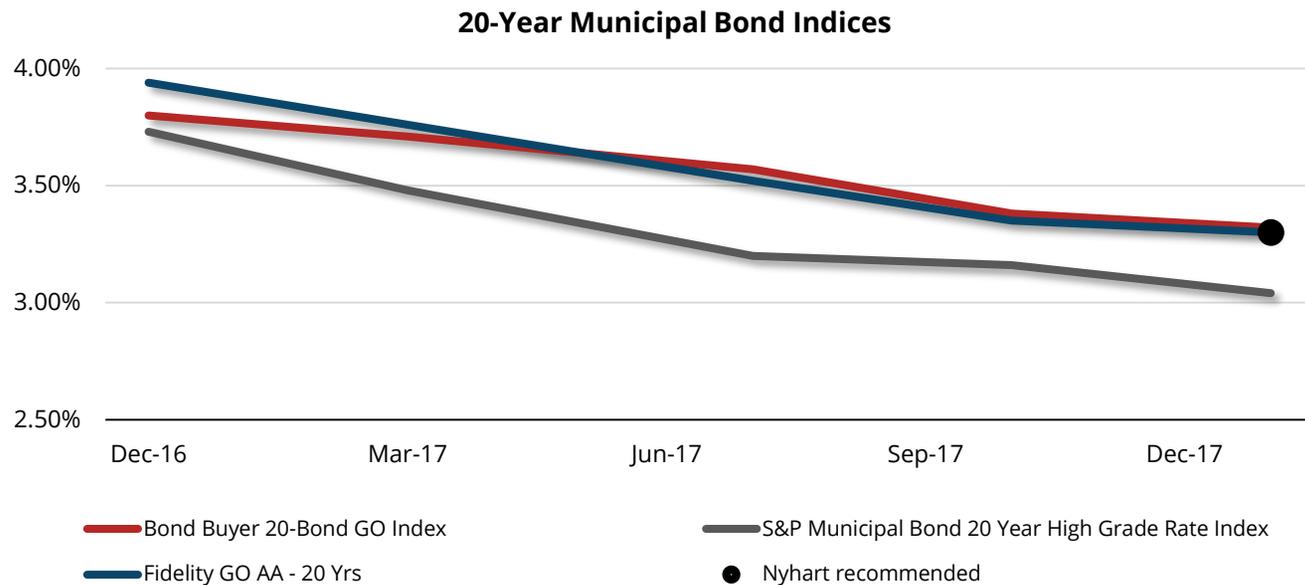
Discussion of Discount Rates

Plan Sponsor GASB 75 Valuation for Fiscal Year Ending June 30, 2017

Under GASB 75, the discount rate used in valuing OPEB liabilities for unfunded plans as of the Measurement Date must be based on a yield for 20-year tax-exempt general obligation municipal bonds with an average rating of AA /Aa or higher (or equivalent quality on another rating scale).

For the current valuation, the discount rate was selected from the range of indices as shown in the table below, where the range is given as the spread between the lowest and highest rate shown.

	Bond Buyer Go 20-Bond Municipal Bond Index	S&P Municipal Bond 20-Year High Grade Rate Index	Fidelity 20-Year Go Municipal Bond Index	Nyhart Recommendation	Actual Discount Rate Used
Yield as of July 1, 2016	2.85%	2.71%	2.92%	2.71% - 2.92%	2.92%
Yield as of June 30, 2017	3.53%	3.13%	3.56%	3.13% - 3.56%	3.56%



Summary of Plan Participants

Plan Sponsor GASB 75 Valuation for Fiscal Year Ending June 30, 2017

Active Employees

Actives with coverage	Single	Non-Single	Total	Avg. Age	Avg. Svc	Salary
Plan 1	11	32	43	55.1	18.3	\$ 3,027,815
Plan 2	113	202	315	45.4	9.6	\$ 15,071,493
Plan 3	6	13	19	40.0	7.1	\$ 916,011
Total actives with coverage	130	247	377	46.2	10.5	\$ 19,015,319

Actives without coverage	Total	Avg. Age	Avg. Svc	Salary
Total actives without coverage	5	45.0	3.0	\$ 250,000

Enrollment information above is for full-time employees who are eligible for retiree health care benefits only.

Summary of Plan Participants

Plan Sponsor GASB 75 Valuation for Fiscal Year Ending June 30, 2017

Active Age-Service Distribution

Age	Years of Service										Total	
	< 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 & up		
Under 25		2										2
25 to 29		34	4									38
30 to 34		29	15	2								46
35 to 39		14	15	18	3							50
40 to 44	3	15	4	7	9							38
45 to 49	2	18	7	18	5	2	2					54
50 to 54		25	7	7	8	4		1				52
55 to 59		10	6	12	5	3	2	1	2			41
60 to 64		8	7	3	6	6	5	4	4			43
65 to 69		4	1	3	1	3		1	1	1		15
70 & up		1					1	1				3
Total	5	160	66	70	37	18	10	8	7	1		382

Summary of Plan Participants

Plan Sponsor GASB 75 Valuation for Fiscal Year Ending June 30, 2017

Retirees

Retirees with coverage	Single	Non-Single	Total	Avg. Age
Plan 1	2		2	63.9
Plan 2	5	2	7	63.0
Total retirees with coverage	7	2	9	63.2

Retiree Age Distribution

Age	Retirees
< 45	
45 to 49	
50 to 54	
55 to 59	
60 to 64	9
65 to 69	
70 to 74	
75 to 79	
80 to 84	
85 to 89	
90 & up	
Total	9

Substantive Plan Provisions

Plan Sponsor GASB 75 Valuation for Fiscal Year Ending June 30, 2017

Eligibility

All employees meeting ERS pension eligibility requirements below and have ten years of service with Plan Sponsor are eligible for retiree health benefits (bundled medical and vision) until they are eligible for Medicare.

Eligibility for Tier 1 members (hired before July 1, 2009) is the earlier of:

1. Age 55 with 10 years of service
2. Rule of 85
3. Age 65 with 1 year of service
4. Age 62 with 10 years of service

Eligibility for Tiers 2 & 3 members (hired on/after July 1, 2009) is the earlier of:

1. Age 55 with 10 years of service
2. Age 60 with 30 years of service
3. Age 65 with 5 years of service

Spouse Benefit

Spousal coverage continues until the earlier of (1) the date the retiree becomes Medicare eligible and (2) the date the spouse becomes Medicare eligible. Surviving spouses are eligible for COBRA coverage.

Dental

This report does not reflect any liabilities for dental coverage. Plan Sponsor does not have any explicit or implicit subsidies for dental benefits that would generate an actuarial liability as retirees pay the full cost of this benefit.

Early Retirement Incentive

The Plan Sponsor offered Voluntary Retirement Incentive Program (VRIP) to employees who are eligible for retiree health benefits. Refer to Appendix A for VRIP liabilities and description of benefits.

Substantive Plan Provisions

Plan Sponsor GASB 75 Valuation for Fiscal Year Ending June 30, 2017

Medical Benefits

Same benefits are available to retirees as active employees. All health plans are fully-insured and partially experience-rated. The monthly funding rates by plan effective on January 1, 2017 are as shown below.

Plans	EE	EE + Sp
PPO	\$ 572.40	\$ 1,259.28
HDHP	\$ 427.08	\$ 939.58
Vision	\$ 12.29	\$ 12.29

Refer to Appendix D for a brief summary of benefit descriptions for all health plans effective on January 1, 2016.

Retiree Cost Sharing

Retirees contribute the funding rate plus 2% COBRA load. Rates effective on January 1, 2017 are as shown below.

Plans	EE	EE + Sp
PPO	\$ 583.85	\$ 1,284.47
HDHP	\$ 435.62	\$ 958.37
Vision	\$ 12.54	\$ 12.54

Explicit Subsidy

None

Actuarial Methods and Assumptions

Plan Sponsor GASB 75 Valuation for Fiscal Year Ending June 30, 2017

The actuarial assumptions used in this report represent a reasonable long-term expectation of future OPEB outcomes. As national economic and Plan Sponsor experience change over time, the assumptions will be tested for ongoing reasonableness and, if necessary, updated.

There are changes to the actuarial methods and assumptions since the last GASB valuation, which was for the fiscal year ending June 30, 2015. Refer to Actuary's Notes section for complete information on these changes. For the current year GASB valuation, we have also updated the per capita costs. We expect to update discount rate, health care trend rates, and per capita costs again in the next full GASB valuation, which will be for the fiscal year ending June 30, 2019.

Measurement Date	For fiscal year ending June 30, 2017, June 30, 2017 measurement date was used.
Actuarial Valuation Date	June 30, 2017 with no adjustments to get to the June 30, 2017 measurement date. Liabilities as of July 1, 2016 are based on an actuarial valuation date of June 30, 2015 projected to June 30, 2016 on a "no loss / no gain" basis.
Discount Rate	2.92% as of July 1, 2016 and 3.56% as of June 30, 2017 for accounting disclosure purposes. Refer to the Discussion of Discount Rates section for more information on selection of the discount rate.
Payroll Growth	3.0% per year
Inflation Rate	3.0% per year
Cost Method	Allocation of Actuarial Present Value of Future Benefits for services prior and after the Measurement Date was determined using Entry Age Normal Level % of Salary method where: <ul style="list-style-type: none">• service Cost for each individual participant, payable from date of employment to date of retirement, is sufficient to pay for the participant's benefit at retirement; and• annual Service Cost is a constant percentage of the participant's salary that is assumed to increase according to the Payroll Growth.
Employer Funding Policy	Pay-as-you-go cash basis
Census Data	Census information was provided by the Plan Sponsor and it was provided in August 2017. We have reviewed it for reasonableness and no material modifications were made to the census data.

Actuarial Methods and Assumptions

Plan Sponsor GASB 75 Valuation for Fiscal Year Ending June 30, 2017

Experience Study

Best actuarial practices call for a periodic assumption review and Nyhart recommends the Plan Sponsor to complete an actuarial assumption review (also referred to as an experience study) before transitioning to the new GASB 75 standard for fiscal year ending June 30, 2018. The actuarial assumptions have not been updated since at least the 2011 valuation.

Health Care Coverage Election Rate

Active employees with current coverage: 100%
Active employees with no coverage: 0%

Inactive employees with current coverage: 100%
Inactive employees with no coverage: 0%

Spousal Coverage

Spousal coverage for current retirees is based on actual data.

50% of employees are assumed to be married at retirement. 100% of spouses are assumed to elect coverage under the retiree group health plan. Husbands are assumed to be three years older than wives.

Mortality

RPH-2015 Total Dataset Mortality Table fully generational using Scale MP-2015 (RPH-2015 table is created based on RPH-2014 Total Dataset Mortality Table with 8 years of MP-2014 mortality improvement backed out, projected to 2015 using MP-2015 improvement.)

Actuarial Methods and Assumptions

Plan Sponsor GASB 75 Valuation for Fiscal Year Ending June 30, 2017

Disability

None

Turnover Rate

Assumption used to project terminations (voluntary and involuntary) prior to meeting minimum retirement eligibility for retiree health coverage. The rates represent the probability of termination in the next 12 months.

The termination rates are based on ERS pension actuarial valuation for FYE December 31, 2014. Sample annual turnover rates are shown below:

YOS	Male	Female
0	20.0%	23.0%
5	8.3%	9.0%
10	4.1%	5.0%
15	3.1%	3.3%
20	2.4%	2.2%
25	1.4%	1.2%
30	0.8%	1.0%

Actuarial Methods and Assumptions

Plan Sponsor GASB 75 Valuation for Fiscal Year Ending June 30, 2017

Retirement Rate

Annual rates of retirement are based on ERS Local (with 100% retirement at age 65).

Age	Rule 85 Met		Rule 85 Not Met
	1 st Year	After 1 st Year	All Years
55 – 58	13%	10%	5%
59	15%	12%	7%
60	15%	12%	7%
61	25%	25%	20%
62	25%	25%	25%
63	20%	20%	20%
64	30%	30%	30%
65	100%	100%	100%

Health Care Trend Rates

FYE	Medical/Rx	FYE	Medical/Rx
2016	9.0%	2021	6.5%
2017	8.5%	2022	6.0%
2018	8.0%	2023	5.5%
2019	7.5%	2024+	5.0%
2020	7.0%		

The initial trend rate was based on a combination of employer history, national trend surveys, and professional judgment.

The ultimate trend rate was selected based on historical medical CPI information.

Retiree Contributions

Retiree contributions are assumed to increase according to health care trend rates.

Actuarial Methods and Assumptions

Plan Sponsor GASB 75 Valuation for Fiscal Year Ending June 30, 2017

Per Capita Costs

Annual per capita costs were calculated based on the 2017 funding rates, actuarially increased using health index factors and current enrollment. All employees are assumed to elect the PPO plan at retirement. The costs are assumed to increase with health care trend rates.

Annual per capita costs are as shown below:

Age	PPO
<55	\$ 8,600
55 – 59	\$ 10,400
60 – 64	\$ 12,900

The per capita costs represent the cost of coverage for a retiree-only population.

Actuarial standards require the recognition of higher inherent costs for a retired population versus an active population.

Annual vision per capita cost is assumed to be \$147, increasing by 3% annually.

Explicit Subsidy

The difference between (a) the premium rate and (b) the retiree contribution. Below is an example of the monthly explicit subsidies for a future retiree who is enrolled in the PPO plan with vision coverage.

	Premium Rate	Retiree Contribution ²	Explicit Subsidy
	A	B	C = A – B
Retiree	\$ 584.69	\$ 584.69	\$ 0.00
Spouse	\$ 686.88	\$ 686.88	\$ 0.00

Implicit Subsidy

The difference between (a) the per capita cost and (b) the premium rate. Below is an example of the monthly implicit subsidies for a retiree age 60 with spouse of the same age enrolled in the PPO plan with vision coverage.

	Per Capita Cost	Premium Rate	Implicit Subsidy
	A	B	C = A – B
Retiree	\$ 1,087.29	\$ 584.69	\$ 502.60
Spouse	\$ 1,087.29	\$ 686.88	\$ 400.41

All employers that utilize premium rates based on blended active/retiree claims experience will have an implicit subsidy. There is an exception for Medicare plans using a true community-rated premium rate.

² Limited to premium rates for illustration purposes.

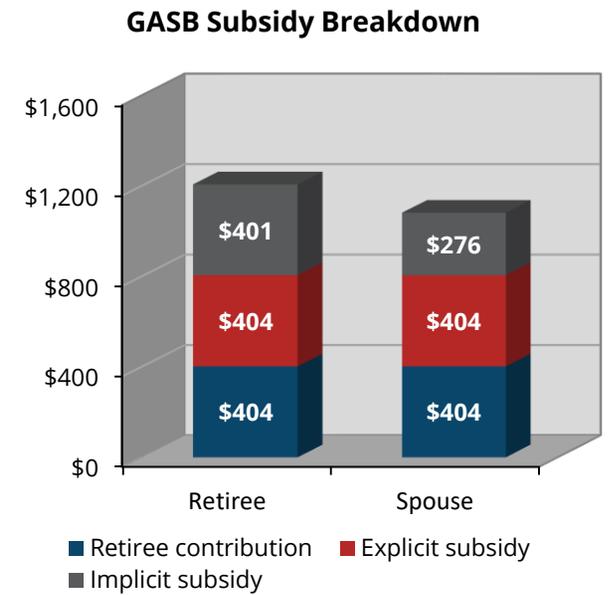
Actuarial Methods and Assumptions

Plan Sponsor GASB 75 Valuation for Fiscal Year Ending June 30, 2017

GASB Subsidy Breakdown

Below is a breakdown of the GASB 45 monthly total cost for a retiree age 60 with spouse of the same age enrolled in the PPO plan with vision coverage.

	Retiree		Spouse	
Retiree contribution	\$	584.69	\$	686.88
Explicit subsidy	\$	0.00	\$	0.00
Implicit subsidy	\$	502.60	\$	400.41
Total monthly cost	\$	1,087.29	\$	1,087.29



APPENDIX

Appendix

Plan Sponsor GASB 75 Valuation for Fiscal Year Ending June 30, 2017

GASB Results by Group

Below is the summary of the GASB results for fiscal year ending June 30, 2017 based on the Entry Age Normal Level % of Pay cost method with a discount rate of 3.56%.

Union Groups	Total OPEB Liability		Actuarial Value of Assets		Net OPEB Liability	
	As of June 30, 2017		As of June 30, 2017		As of June 30, 2017	
Group 1	\$	111,301	\$	0	\$	111,301
Group 2	\$	29,356	\$	0	\$	29,356
Group 3	\$	266,880	\$	0	\$	266,880
Group 4	\$	212,358	\$	0	\$	212,358
Group 5	\$	590,801	\$	0	\$	590,801
Total	\$	1,210,696	\$	0	\$	1,210,696

Union Groups	Unamortized Balance of Deferred Outflows		Unamortized Balance of Deferred Inflows		OPEB Expense	
	As of June 30, 2017		As of June 30, 2017		FY 2016/17	
Group 1	\$	10,101	\$	0	\$	2,721
Group 2	\$	0	\$	(2,681)	\$	3,715
Group 3	\$	0	\$	(14,545)	\$	-2,277
Group 4	\$	0	\$	(60,092)	\$	(1,659)
Group 5	\$	69,672	\$	0	\$	26,261
Total	\$	79,773	\$	(77,318)	\$	28,761

Appendix

Plan Sponsor GASB 75 Valuation for Fiscal Year Ending June 30, 2017

Comparison of Participant Demographic Information

The active participants' number below may include active employees who currently have no health care coverage. Refer to Summary of Participants section for an accurate breakdown of active employees with and without coverage.

	As of July 1, 2015	As of July 1, 2017
Active Participants	340	382
Retired Participants	27	9
Averages for Active		
Age	44.7	46.8
Service	12.9	10.4
Averages for Inactive		
Age	61.9	63.2

Appendix

Plan Sponsor GASB 75 Valuation for Fiscal Year Ending June 30, 2017

Detailed Actuary's Notes

There have been no substantive plan provision changes since the last full valuation, which was for the fiscal year ending June 30, 2015.

The Plan Sponsor have opted to disclose OPEB liabilities under GASB 75 for the current valuation. The prior valuation was disclosed under GASB 45. The following assumptions have been updated in accordance with GASB 75.

1. The actuarial cost method has been updated from Projected Unit Credit with linear proration to decrement to Entry Age Normal Level % of Salary. This change has caused an increase in liabilities for both the County and the District.
2. Discount rate as of the Measurement Date has been updated to be based on a yield for 20-year tax-exempt general obligation municipal bonds with an average rating of AA/Aa or higher (or equivalent quality on another rating scale) tax-exempt, high quality 20-year municipal bonds. The prior full valuation used a discount rate of 4.0%. The current full valuation uses a discount rate of 2.92% as of July 1, 2016 and 3.56% as of June 30, 2017. This change has caused an increase in liabilities.

The discount rate will be updated annually to reflect market conditions as of the Measurement Date.

Additionally, the following assumptions have also been updated:

1. Mortality table has been updated from RP-2000 Combined Mortality Table fully generational using Scale AA to SOA RPH-2015 Total Dataset Mortality Table fully generational using Scale MP-2015. The impact of this change is a decrease in liabilities for the Plan Sponsor.
2. Health care trend rates have been reset to an initial rate of 9.0% decreasing by 0.5% annually to an ultimate rate of 5.0% as shown below. This change caused an increase in liabilities for the Plan Sponsor.

<u>Year</u>	<u>Prior</u>	<u>Current</u>	<u>Year</u>	<u>Prior</u>	<u>Current</u>
2016	8.0%	9.0%	2021	5.5%	6.5%
2017	7.5%	8.5%	2022	5.0%	6.0%
2018	7.0%	8.0%	2023	5.0%	5.5%
2019	6.5%	7.5%	2024+	5.0%	5.0%
2020	6.0%	7.0%			

Appendix

Plan Sponsor GASB 75 Valuation for Fiscal Year Ending June 30, 2017

Summary of Medical Benefits

A brief summary of all health plans offered by the Plan Sponsor effective on July 1, 2016 is as shown below. The out-of-pocket maximum includes the deductible, coinsurance, and copayments.

SAU Pre-65 Plans (In-Network ³)	Green Plan	Blue Plan	Red Plan	Yellow Plan
Deductible (EE / Family)	\$0 / \$0	\$0 / \$0	\$250 / \$500	\$1,250 / \$2,500
Coinsurance	100%	100%	80%	80%
Out-of-Pocket Maximum (EE / Family)	\$1,000 / \$ 2,000	\$1,000 / \$ 2,000	\$1,000 / \$ 2,000	\$2,000 / \$4,000
Copay / co-insurances for:				
Office Visit	\$10	\$10	Subject to ded / coins	Subject to ded / coins
Urgent Care	\$25	\$25	\$25	Subject to ded / coins
Emergency Room	\$50	\$50	\$50	Subject to ded / coins
Prescription drugs				
Out-of-Pocket Maximum (EE / Family)	\$2,000 / \$4,000	\$2,000 / \$4,000	\$2,000 / \$4,000	N/A
Retail (Generic / Pref / Non-Pref)	\$5 / \$15/ \$35	\$5 / \$15/ \$35	\$5 / \$15/ \$35	90% coins / max \$75
Mail Order (Generic / Pref / Non-Pref)	\$5 / \$15/ \$35	\$5 / \$15/ \$35	\$0 / \$15/ \$35	90% coins / max \$75

³There is no coverage for all services except for Emergency Room and Urgent Care out of network for Green, Red, and Yellow plans. For Blue plan, there is out of network coverage with different provisions than what's shown above.

GLOSSARY

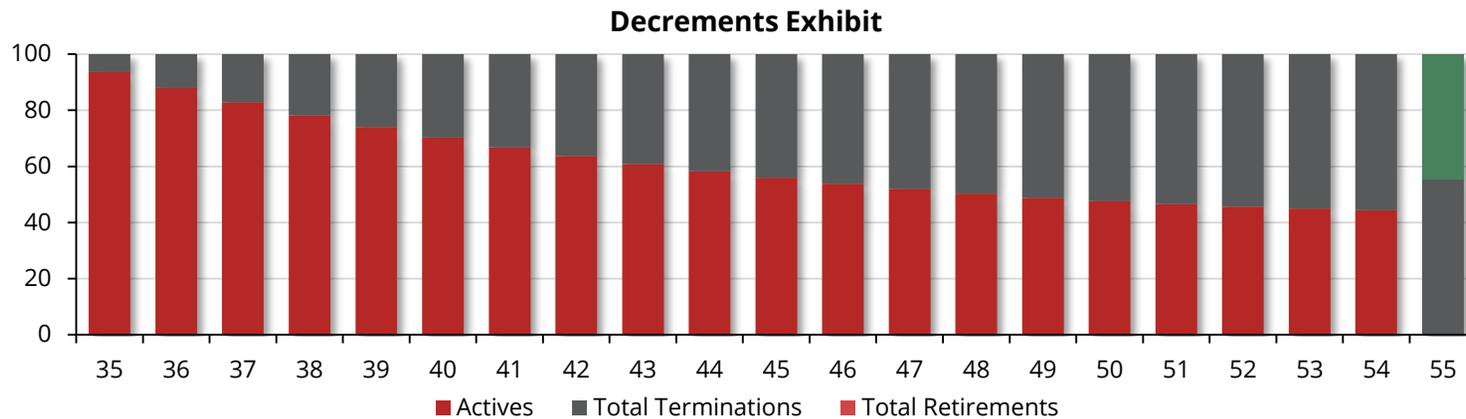
Glossary – Decrements Exhibit

Plan Sponsor GASB 75 Valuation for Fiscal Year Ending June 30, 2017

The table below illustrates how actuarial assumptions can affect a long-term projection of future liabilities. Starting with 100 employees at age 35, the illustrated actuarial assumptions show that 44.43 employees out of the original 100 are expected to retire and could elect retiree health benefits at age 55.

Age	# Remaining Employees	# of Terminations per Year ⁴	# of Retirements per Year	Total Decrements
35	100.000	6.276	0.000	6.276
36	93.724	5.677	0.000	5.677
37	88.047	5.136	0.000	5.136
38	82.911	4.648	0.000	4.648
39	78.262	4.209	0.000	4.209
40	74.053	3.814	0.000	3.814
41	70.239	3.456	0.000	3.456
42	66.783	3.131	0.000	3.131
43	63.652	2.835	0.000	2.835
44	60.817	2.564	0.000	2.564
45	58.253	2.316	0.000	2.316

Age	# Remaining Employees	# of Terminations per Year	# of Retirements per Year	Total Decrements
46	55.938	2.085	0.000	2.085
47	53.853	1.866	0.000	1.866
48	51.987	1.656	0.000	1.656
49	50.331	1.452	0.000	1.452
50	48.880	1.253	0.000	1.253
51	47.627	1.060	0.000	1.060
52	46.567	0.877	0.000	0.877
53	45.690	0.707	0.000	0.707
54	44.983	0.553	0.000	0.553
55	44.430	0.000	44.430	44.430



⁴ The above rates are illustrative rates and are not used in our GASB calculations.

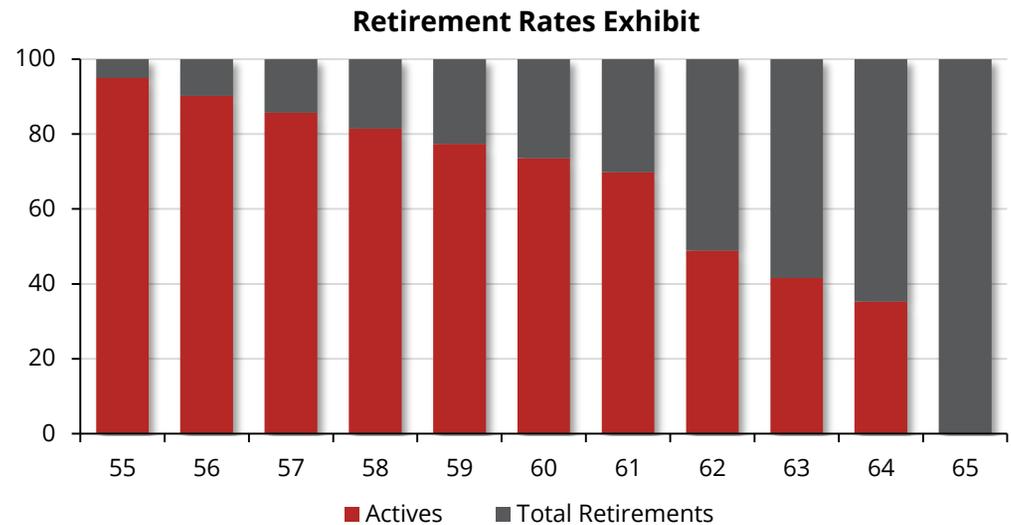
Glossary – Retirement Rates Exhibit

Plan Sponsor GASB 75 Valuation for Fiscal Year Ending June 30, 2017

The table below illustrates how actuarial assumptions can affect a long-term projection of future liabilities. The illustrated retirement rates show the number of employees who are assumed to retire annually based on 100 employees age 55 who are eligible for retiree health care coverage. The average age at retirement is 62.0.

Age	Active Employees BOY	Annual Retirement Rates*	# Retirements per Year	Active Employees EOY
55	100.000	5.0%	5.000	95.000
56	95.000	5.0%	4.750	90.250
57	90.250	5.0%	4.513	85.738
58	85.738	5.0%	4.287	81.451
59	81.451	5.0%	4.073	77.378
60	77.378	5.0%	3.869	73.509
61	73.509	5.0%	3.675	69.834
62	69.834	30.0%	20.950	48.884
63	48.884	15.0%	7.333	41.551
64	41.551	15.0%	6.233	35.318
65	35.318	100.0%	35.318	0.000

* The above rates are illustrative rates and are not used in our GASB calculations.



Glossary – Definitions

Plan Sponsor GASB 75 Valuation for Fiscal Year Ending June 30, 2017

GASB 75 defines several unique terms not commonly employed in the funding of pension and retiree health plans. The definitions of the terms used in the GASB actuarial valuations are noted below.

1. **Actuarial Assumptions** – Assumptions as to the occurrence of future events affecting health care costs, such as: mortality, withdrawal, disablement and retirement; changes in compensation and Government provided health care benefits; rates of investment earnings and asset appreciation or depreciation; procedures used to determine the Actuarial Value of Assets; characteristics of future entrants for Open Group Actuarial Cost Methods; and other relevant items.
2. **Actuarial Cost Method** – A procedure for determining the Actuarial Present Value of Future Benefits and expenses and for developing an actuarially equivalent allocation of such value to time periods, usually in the form of a Service Cost and a Total OPEB Liability.
3. **Actuarially Determined Contribution** - A target or recommended contribution to a defined benefit OPEB plan for the reporting period, determined in accordance with the parameters and in conformity with Actuarial Standards of Practice.
4. **Actuarial Present Value** – The value of an amount or series of amounts payable or receivable at various times, determined as of a given date by the application of a particular set of Actuarial Assumptions. For purposes of this standard, each such amount or series of amounts is:
 - a. adjusted for the probable financial effect of certain intervening events (such as changes in compensation levels, Social Security, marital status, etc.);
 - b. multiplied by the probability of the occurrence of an event (such as survival, death, disability, termination of employment, etc.) on which the payment is conditioned; and
 - c. discounted according to an assumed rate (or rates) of return to reflect the time value of money.
5. **Deferred Outflow / (Inflow) of Resources** – represents the following items that have not been recognized in the OPEB Expense:
 - a. Differences between expected and actual experience of the OPEB plan
 - b. Changes in assumptions
 - c. Differences between projected and actual earnings in OPEB plan investments (for funded plans only)
6. **Explicit Subsidy** – The difference between (a) the amounts required to be contributed by the retirees based on the premium rates and (b) actual cash contribution made by the employer.
7. **Funded Ratio** – The actuarial value of assets expressed as a percentage of the Total OPEB Liability.

Glossary – Definitions

Plan Sponsor GASB 75 Valuation for Fiscal Year Ending June 30, 2017

8. **Healthcare Cost Trend Rate** – The rate of change in the per capita health claims costs over time as a result of factors such as medical inflation, utilization of healthcare services, plan design, and technological developments.
9. **Implicit Subsidy** – In an experience-rated healthcare plan that includes both active employees and retirees with blended premium rates for all plan members, the difference between (a) the age-adjusted premiums approximating claim costs for retirees in the group (which, because of the effect of age on claim costs, generally will be higher than the blended premium rates for all group members) and (b) the amounts required to be contributed by the retirees.
10. **OPEB** – Benefits (such as death benefits, life insurance, disability, and long-term care) that are paid in the period after employment and that are provided separately from a pension plan, as well as healthcare benefits paid in the period after employment, regardless of the manner in which they are provided. OPEB does not include termination benefits or termination payments for sick leave.
11. **OPEB Expense** – Changes in the Net OPEB Liability in the current reporting period, which includes Service Cost, interest cost, changes of benefit terms, expected earnings on OPEB Plan investments, reduction of active employees' contributions, OPEB plan administrative expenses, and current period recognition of Deferred Outflows / (Inflows) of Resources.
12. **Pay-as-you-go** – A method of financing a benefit plan under which the contributions to the plan are generally made at about the same time and in about the same amount as benefit payments and expenses becoming due.
13. **Per Capita Costs** – The current cost of providing postretirement health care benefits for one year at each age from the youngest age to the oldest age at which plan participants are expected to receive benefits under the plan.
14. **Present Value of Future Benefits** – Total projected benefits include all benefits estimated to be payable to plan members (retirees and beneficiaries, terminated employees entitled to benefits but not yet receiving them, and current active members) as a result of their service through the valuation date and their expected future service. The actuarial present value of total projected benefits as of the valuation date is the present value of the cost to finance benefits payable in the future, discounted to reflect the expected effects of the time value (present value) of money and the probabilities of payment. Expressed another way, it is the amount that would have to be invested on the valuation date so that the amount invested plus investment earnings will provide sufficient assets to pay total projected benefits when due.
15. **Real Rate of Return** – the rate of return on an investment after adjustment to eliminate inflation.

Glossary – Definitions

Plan Sponsor GASB 75 Valuation for Fiscal Year Ending June 30, 2017

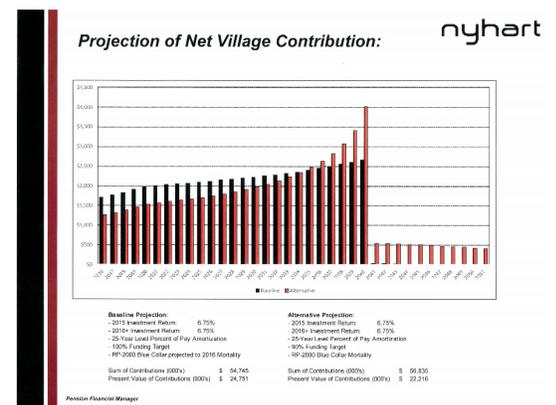
16. **Select and Ultimate Rates** – Actuarial assumptions that contemplate different rates for successive years. Instead of a single assumed rate with respect to, for example, the investment return assumption, the actuary may apply different rates for the early years of a projection and a single rate for all subsequent years. For example, if an actuary applies an assumed investment return of 8% for year 20W0, then 7.5% for 20W1, and 7% for 20W2 and thereafter, then 8% and 7.5% select rates, and 7% is the ultimate rate.
17. **Service Cost** – The portion of the Actuarial Present Value of projected benefit payments that are attributed to a valuation year by the Actuarial Cost Method.
18. **Substantive Plan** – The terms of an OPEB plan as understood by the employer(s) and plan members.
19. **Total OPEB Liability** – That portion, as determined by a particular Actuarial Cost Method, of the Actuarial Present Value of Future Benefits which is attributed to past periods of employee service (or not provided for by the future Service Costs).

Nyhart's Innovations

Nyhart is always looking to “Do Better. Do Different.” Our focus on technology and innovation has led to many tools and services to assist plan sponsors in challenging times. Here are a few examples:

Online Data Processing Tool: Online data center for requesting, collecting and preparation of the census information. As census information is submitted, it will be immediately evaluated against a predetermined list of data checks and compared with prior data. Also used to collect other necessary documents needed for the valuation and/or administration processes.

Pension Financial Manager (“PFM”): PFM is our pension cost modeler that provides current and projected important financial information about the plan such as funded ratio, cash requirements, accounting expense and balance sheet, and PBGC premiums. PFM can model different economic variables, funding strategies, and plan termination scenarios on the fly. Knowing how important it is for plan sponsors to be focusing on the future, we’ve built this extremely important tool so it is a by-product of the valuation and we now include it as part of our annual valuation fee.



Pension Design Manager (“PDM”): PDM is a design-modeling tool that Nyhart created to illustrate the benefit value being delivered to current participants. It can demonstrate benefits from defined benefit, defined contribution and social security. PDM can model different proposed plan provisions on the fly to determine the impact on participants. This tool provides critical benefit information in a cost efficient manner.

Readiness Statements: Many participants are struggling to plan for retirement. To assist in this process, we have developed Readiness Statements that consolidates information in an easy to understand format to allow participants more effectively plan for retirement. The statement can consider retirement income from several sources: defined benefit plans, defined contribution plans, personal savings, and social security. Some clients utilize a dynamic online version of these statements that allows participants to model different assumptions.

Annuity Placement Services: Seeing a need in the marketplace several years for annuity placement services, we developed these services to help plan sponsors buy group annuities. Our services meet the requirements of the Department of Labor safe harbor notice, involves up to 15 insurance companies to ensure competitive bidding, and transparent fees. We do not take any commissions from the insurance companies.

Pension Risk: For all defined benefit plan sponsors pension risk is important to understand. By using PFM, we are able to demonstrate the types of risks (interest rates, market returns, and mortality) and their impact to plan sponsors. This is the first step in understanding what pension risk means for each plan sponsor. Nyhart can help you identify advantages of implementing pension risk strategies and long-term implications. We also have the staff and tools to help facilitate the implementation of these strategies. For example, if a plan chooses to utilize a lump sum window to reduce risk we can handle participant calculations, communications, and payment initiation.

Pension Administration Services: There are many ways that a pension plan can cover the administrative needs for the plan. It can be covered entirely internally, with some assistance from the actuary, or it can be completely outsourced. We have developed nyPAS, Nyhart's pension administration solution with this in mind. nyPAS can be used internally to process calculations and maintain data or used by Nyhart to provide administration services for the plan.

Communication: We know financial equations and charts can be rather daunting. That is one reason why we put forth the extra effort to summarize information in a way that is easier for our clients to follow. Our communication approach is not just to give the minimum necessary information but to educate our clients as we explain actuarial issues. Our communication approach and dynamic tools allow our clients to make effective decisions regarding their pension plans. We consistently hear feedback from our clients that our communication style is a key reason they love to work with us.

One example of the extra effort we put forth is the development of our management summary report. Actuarial reports tend to contain so much detail that the key results get lost in translation. At Nyhart, we avoid this issue by providing a management summary report that brings the most important information to the forefront and allows our clients to more efficiently manage their plans. Management summary reports generally include the key valuation results, cost projections, topics of interest for our clients, and retirement plan trend information.

Votaire: Nyhart offers proprietary financial lifecycle software called Votaire.

Financial stress lowers productivity and morale, at the same time can lead to increases in health care utilization.

Because 71% of Americans consider financial matters to be a leading cause of their stress, it is only logical for employers to deploy a life-cycle financial platform like Votaire.

What can Votaire do for Employers?

- Offer insight about staff retirement readiness and its effect on succession planning.
- Provide an easy-to-use, actuarial-based platform for employees to utilize to help reduce their own financial stress – thus higher engagement and productivity.
- Make available a cost effective benefit to employees that they will consider a highly coveted perquisite for working at your organization.

- Employees who are highly engaged in their financial wellbeing are less likely to be sick, therefore better managing health care costs.

How does Votaire Benefit Employees?

- Employees receive guidance related to all major financial and healthcare issues from their own virtual actuary.
- Budget tips for major financial decisions like life insurance, retirement, health savings accounts, and emergency savings.
- Stress tests for planned retirement date, including modeling zip-code level ACA/Medicare costs.
- To have a holistic overview of their economic life, including daily monitoring of retirement and non-retirement accounts.

**Votaire is revolutionizing financial wellness.
We help plan for your *whole* life - not just part of it.**

Cyber and Information Security Policy



POLICY REVIEW AND COMPLIANCE

Nyhart information security policies are reviewed at least annually and refined as necessary to keep current with modern threats and in line with updates to widely accepted security and Privacy standards, such as NIST 800-53 and HIPAA.



HIRING VALIDATION

Nyhart follows a mandated set of employment verification requirements for all new hires. The requirements, which may be subject to change, include, but may not be limited to, criminal background checks and proof of identity validation.



PRIVACY AND SECURITY EDUCATION

Nyhart employees are required to complete security and privacy education annually and certify that they will comply with Nyhart's data protection and security requirements, as set out in Nyhart's Internal Company Security Policy and employment agreement.



PROTECTION OF CLIENT INFORMATION

Nyhart maintains a number of technical and policy controls to ensure that client information is protected securely, strongly adhering to the notion of Defense in Depth. Including, but not limited to: policy of least privilege, Next-generation Firewalls, IDS/IPS, Security Information and Event Monitoring, Full-suite endpoint protection, Extensive DLP capabilities and Full-Disk Encryption for any device that leaves Nyhart's network.



ADDITIONAL 24/7 MONITORING

Nyhart also enjoys the protection of a state of the art 3rd party external monitoring service that watches Nyhart's network 24x7x365, actively mitigating all malicious activity.



VULNERABILITY TESTING

Nyhart network and web applications undergo penetration testing and vulnerability scanning on a yearly basis. Any issues or vulnerabilities are then quickly mitigated to ensure the stability and security of our services.



RESPONSE POLICIES

Security incidents are handled in accordance with the Nyhart incident management and response policies, taking into account data breach notification requirements under applicable law.



INCIDENT RESPONSE TEAM

The Nyhart Incident Response team coordinates with our 3rd party monitoring service to investigate suspected incidents, and if warranted, define and execute the appropriate response plan. Upon determining that a security incident has occurred, Nyhart will promptly notify affected clients as appropriate.



DISASTER RECOVERY

Nyhart employs a comprehensive Disaster Recovery scheme. Backups are performed at minimum of every 6 hours, to a fully redundant off-site data center. Long term storage is also maintained for a minimum of 1 year. Full disaster recovery tests are completed once a year and partial tests are completed multiple times throughout the year, to ensure capabilities work as intended.



John's Financial Plan

September 20, 2017

Holistic | Financial | Planning

Summary

John,

Welcome to your personalized financial plan. Votaire has created this plan to help you reach your goals, whatever they may be.

Votaire considers many factors in creating your custom plan, including your *personalized*:

- Retirement Goals
- Longevity
- Healthcare Costs
- Investments, and
- Expenses

Our projections are based on the inputs you provided on the Votaire platform. Please consult the Actuarial Disclaimer to learn more about our methodology.

Your inputs:

	John
Retirement Age	65
Retirement Year	2032
Current Income	\$75,000
Current Savings	\$383,241
Contribution Percentage	7.5%

Holistic | Financial | Planning

To-Do List

Financial planning can be an intimidating process. Many people fail to even get started on their plan. Using Votaire puts you ahead of the crowd. Now that you see the real numbers, the next step is to accomplish the below To-Do's.

- Save \$12,100 more in your Emergency Fund
- Get a 15 year term policy with a face value of \$15,000
- Get a Will

Holistic | Financial | Planning

Income and Expenses at Retirement

Income

The information below represents your projected income and expenses in year one of retirement. Votaire has created a sustainable annual savings withdrawal based on our projections. This withdrawal amount takes into account all sources of income, including Social Security. See p.5 for more on your sustainable income stream.

Projected Income at Retirement	Amount
Savings Withdrawal	\$29,600
Social Security	\$41,600
TOTAL	\$71,200

Projected Expenses at Retirement	Amount
Medicare Part B Premium	\$3,900
Medicare Part D Premium	\$1,200
Out-of-Pocket Drug Costs	\$2,000
Medicare Supplement Plan Premium	\$3,400
Dental Premium	\$1,300
Long-Term Care Premium	\$3,200
Vacation Goal	\$2,800
Federal Taxes	\$2,600
State Taxes	\$900
Personal Expenses	\$39,900
TOTAL	\$61,200

Expenses

Votaire's expense projections are meant to indicate what you will spend in retirement. Healthcare costs vary widely based on geography. For that reason, we project what healthcare will cost in your zip code in the years it will be incurred. Similarly, we consider your non-healthcare expenses only during the time period in which they are due. For example, if you indicated that your mortgage will be paid off in retirement, we will assume zero for mortgage costs in retirement. All of our expense projections include projected inflation. Healthcare inflation is calculated at a higher rate.

Holistic | Financial | Planning

Current Budget

Budget

The table below is your detailed budget. Please review the information and ensure it is accurate and up to date.

Expense	Payment Amount	Interest Rate	Years Remaining	Months Remaining	Monthly Amount
Home Mortgage	\$1,100	4.5	12	0	\$1,100
Car	\$425	4.25	3	0	\$425
Credit	\$250	4	2	2	\$250
<i>Debt Total</i>					\$1,775

Expense	Payment Amount	Frequency	Monthly Amount
Essentials	\$1,250	Monthly	\$1,250
Insurance	\$250	Monthly	\$250
Choices	\$750	Monthly	\$750
Other	\$600	Monthly	\$600

Other Expense Total \$2,850

Debt-to-Income Ratio

Your monthly debt obligations are \$1,775. Your current monthly income is \$6,250. This means your current debt to income (DTI) ratio is 28%. Lending institutions look for a DTI ratio below 36% to qualify for most loans. A higher ratio could put you at risk of paying higher interest rates.

<i>Monthly Income</i>	: \$6,250
<i>Monthly Spending</i>	: -\$4,625
<i>Monthly Savings</i>	: \$1,625

Holistic | Financial | Planning

Sustainable Income

You are retiring with a pot of money that must last your lifetime. It is difficult to decide how much you should withdraw when you don't know how long you will live, what your healthcare expenses will be, whether your children will return home or if you will need long-term care. In addition, you may want to go on vacations, leave money behind or achieve other goals.

Votaire's goal is to create a predictable income stream during retirement that accounts for these variables and covers your expense needs and at the same time reduces your chances of outliving your money.

Below are projected numbers for your first 10 years of retirement.

Year	Beginning of Year Balance	Sustainable Income Withdrawal	End of Year Balance
2032	\$1,083,600	\$29,600	\$1,085,200
2033	\$1,085,200	\$30,300	\$1,086,100
2034	\$1,086,100	\$31,100	\$1,086,200
2035	\$1,086,200	\$32,100	\$1,085,400
2036	\$1,085,400	\$33,100	\$1,083,500
2037	\$1,083,500	\$34,100	\$1,080,400
2038	\$1,080,400	\$35,300	\$1,076,100
2039	\$1,076,100	\$36,500	\$1,070,300
2040	\$1,070,300	\$37,800	\$1,063,100
2041	\$1,063,100	\$39,200	\$1,054,200

Holistic | Financial | Planning

Healthcare Costs

One of the most significant and difficult to predict costs is healthcare. Votaire attempts to show the effect of the changing cost of healthcare during your retirement years.

Prior to age 65

If you retire prior to age 65 and you don't have employer-sponsored retiree healthcare you will get insurance from the Affordable Care Act's (ACA) exchanges. Our healthcare projections for this period come from the second cheapest silver plan available in the zip code you provided. The ACA makes subsidies available based on income. Our projections are net of these subsidies. In other words, if your premium is \$10,000, but you'll receive a \$2,000 subsidy, we show your premium as \$8,000.

After age 65

Throughout your career, you paid Medicare taxes to fund Medicare. Medicare is composed of Part A, Part B and Part D (which covers prescriptions). There are also what are called Medicare Supplement Plans, meant to cover the coverage gaps left open by Medicare. Usually, your retirement healthcare costs at age 65 are cheaper than before age 65 when you aren't yet eligible for Medicare.

Long-Term Care Cost

70% of 65 year olds will need some form of long-term care in their lifetime. This care can be very expensive and is not covered by Medicare, so preparing is vital. You've chosen to model a Long-Term Care policy, and your premium is displayed below.

Your total healthcare cost in the first year of retirement is \$15,000. See details below.

Healthcare Costs at Retirement	John
Medicare Part B Premium	\$3,900
Medicare Part D Premium	\$1,200
Out-of-Pocket Drug Costs	\$2,000
Medicare Supplement Plan	\$3,400
Dental Premium	\$1,300
Long-Term Care Premium	\$3,200

Credit Score

Your credit score is an important factor in whether you will be approved for a mortgage, car loan, credit card or any type of loan. If your credit score indicates you may not pay back your borrowed money, lenders are more likely to deny your applications or charge you high interest rates or fees.

Your Experian credit score is 640. The average person your age has a credit score of 646. See below for some tips to raise your score.

Here are some simple and effective ways to improve your credit score:

- Pay your bills on time
- Keep balances low on credit cards
- Only open new credit accounts as needed
- Pay off debt rather than moving it around

Protect Your Family

Safeguarding your family for times of distress is an important step in creating a sound plan. These are tools and assets we all hope we never need, but can ease the burden in what are already high stress situations.

Emergency Fund

This is money set-aside to cover unexpected emergencies like job losses or major expenses. Based on your current emergency fund information we recommend saving an additional \$12,100. This will allow you to cover most emergencies. If you save \$275 per month it will take you 44 months.

Life Insurance

Going without life insurance is usually a bad idea. If you were to die without it, your family would struggle to cover your lost income and things like your debt, funeral expenses and estate taxes. Based on your current life insurance coverage you should consider adding a 15 year term policy with a face value of \$15,000. This will adequately cover your life insurance needs.

Estate Plan

If you die without a will, you'll have little control over who becomes guardian of your children or who gets your property.

It appears you still need a will. We will make sure that is on your To-Do List.

Holistic | Financial | Planning

Retirement Goals

You indicated you have the goals listed below.

Our income projections account for these goals. If you'd like to improve your forecast without reducing these goals, consider working longer, cutting your current expenses or increasing your current savings.

Goal	Year(s)	Cost
Vacation	Every Year of Retirement	\$2,000
Leave Money Behind	End of Retirement	\$50,000