PROPOSAL FOR PROVISION OF CONSULTING ACTUARIAL SERVICES

FOR

The Minnesota Legislative Commission on Pensions and Retirement

Presented By:

FOSTER & FOSTER

ACTUARIES AND CONSULTANTS

Jason Franken, FSA, EA, MAAA

One Oakbrook Terrace, Suite 720
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June 13, 2014

Mr. Lawrence A. Martin, Executive Director
Legislative Commission on Pensions and Retirement
55 State Office Building
100 Rev. Dr. Martin Luther King Jr. Blvd.
St. Paul, Minnesota 55155

RE: PROFESSIONAL ACTUARIAL SERVICES

Dear Mr. Martin,

I am writing in response to your request for proposal that we received regarding the Minnesota Legislative Commission on Pensions and Retirement. This letter is our effort to emphasize what a pleasure it would be to serve as the Commission's actuary.

Foster & Foster, Inc. is a national actuarial consulting firm that was founded in 1979 and provides pension and welfare actuarial and consulting services to over 300 funds representing over 1,000,000 participants across the United States.

It is our opinion that we are uniquely qualified and would be the best applicant to perform the services requested for the following reasons:

- **Experience working with State Legislatures and Agencies -** We are experts at communicating complex actuarial topics in a way that lawmakers can understand. In the past year, Foster & Foster has testified in front of the legislatures or provided input privately on various proposed legislation in Illinois, Louisiana and Florida. Additionally, Foster & Foster provides actuarial services to the State of Illinois Department of Insurance and State of Florida Department of Management Services.

- **Firm's Expertise-** We have 13 credentialed actuaries with nearly 220 years of actuarial consulting experience. We believe our experience combined with our broad experience servicing other types of organizations positions us to best suit the needs of the Minnesota Legislative Commission on Pensions and Retirement.

- **Consultant's Credentials and Involvement** – We will devote two Fellows of the Society of Actuaries (FSAs) to perform all actuarial services. Our senior consultants will be directly involved in all work performed for the Commission. This involvement assures that all our reports are customized to the Commission's unique circumstances and delivered in a timely fashion

- **Active Consultants –** Our consultants are active across the country with pension organizations that inform and educate Board members. We are visible, articulate, and progressive.

I, Jason Franken, FSA and consulting actuary, will be the principal contact for purposes of this proposal. We commit to exceeding the Commission's expectations for quality and timeliness and can be reached at the mailing address and telephone number printed below. This proposal is valid for one hundred twenty (120) calendar days from June 13, 2014.

If you have any questions regarding this proposal response, our firm, or the services we are prepared to provide, please don't hesitate to contact us.

Sincerely,

Jason L. Franken, FSA, EA, MAAA
Principal, Authorized Officer

Firm Information

1. Firm's Structure, Operational Method, and Communication Capability. Describe the structure of the actuarial firm and its operational method. Include in the description an indication of how the actuarial firm communicates pension fundamentals in an understandable manner to audiences of diverse and non-technical backgrounds.

Foster & Foster Consulting Actuaries, Inc. d/b/a Foster & Foster, Inc., a Florida corporation, is a national independent actuarial consulting firm that was founded in 1979 and is structured to provide actuarial services to public retirement and other post-employment benefit programs. Our firm derives 100% of its revenue from our consulting services.

Our firm currently employs thirty-one (31) consultants, of which thirteen (13) have obtained actuarial credentials. Brad Heinrichs, Jason Franken, Michael Merlob, Aimee Strickland and Heidi Andorfer are Fellows of the Society of Actuaries, the highest distinction an actuary can obtain. Our firm also has a strong support staff with teams devoted to data preparation/collection and asset reconciliation.

We currently have offices in Oakbrook Terrace, IL, and Fort Myers, FL. Additionally, we have satellite offices in Mansfield, TX, Louisville, KY, Tampa, FL, Coral Springs, FL, North Liberty, IA and Newport Beach, CA.

Foster & Foster, Inc. is currently providing ongoing support to more than 200 public sector clients across the nation and provides GASB 45 services for over 50 different entities. We work almost exclusively with public retirement and other post-employment benefit (OPEB) plans and consider ourselves to be experts in all phases of the design and administration of these programs.

The ability of the Firm to meet the needs of its clients is evidenced by the very low client turnover. We have a relationship of over 15 years with nearly half of our clients.

Our Firm consists of two lines of business; pension plan services and health and welfare services. All of Foster & Foster's consultants work closely together where resources are pulled from both groups in order to meet all deadlines and the expectations of our clients.

Since Foster & Foster is routinely involved in State Legislative processes pertaining to pensions, we are keenly aware of the proposed bills and their impacts on Local and State Government. We typically send out firm wide memos to clients keeping them abreast of

proposed legislative changes. Our consultants are active, passionate, and connected within the legislative bodies, and pledge to keep our clients apprised of any and all future proposed legislation. Additionally, we have a dedicated employee in our Chicago office who spends 100% of her time researching and communicating federal and state proposed/executed plan changes to clients and plan members. Our actuaries are proactively seeking opportunities to educate lawmakers and trustees so that they can make informed decisions surrounding their pensions. In our opinion, much of the pension reform that's being considered is too draconian and drastic. A defined benefit plan, in our opinion, is a far better means of providing for retirement than a defined contribution plan. In fact, Foster & Foster has a defined benefit plan for its employees, making us likely the only actuarial firm that practices what it advocates.

2. Firm's Prior Public Pension Experience. Provide a description of any major public employee pension plan actuarial valuation and related experience by the actuarial firm rendered during the last five years and the degree of any consulting or other involvement by the actuarial firm with other elected public bodies.

Foster & Foster provides consulting services to public pension plans for nearly 35 years. We work with over 300 funds across the country. Our largest clients include the Louisiana State Employees' Retirement System, the Teachers' Retirement System of Louisiana and the Metropolitan Water Reclamation District (Chicago) Retirement Fund. Additionally, we were hired by the City of Dallas during 2013 to complete an audit of their three pension funds.

Foster & Foster has been the chosen actuary for the Florida Division of Retirement for the State of Florida for the last 27 years. This Division is in charge of reviewing actuarial reports, as well as creating complimenting reports for almost 100 small municipalities and Fire Control Districts.

Additionally, Foster & Foster has served as the actuary for the State of Illinois, Department of Insurance since 2012. As part of this contract, prepare and/or review actuarial valuations for over 660 police and fire funds in the State of Illinois.

3. **Function of Assigned Firm Personnel and Prior Experience. For each non-clerical employee of the actuarial firm proposed to be assigned to Commission work, identify the Minnesota public employee pension plans or functions with which the person will be involved and indicate the person's prior public employee pension plan experience.**

The persons with the primary responsibility for completion of the worked outlined herein are Jason Franken (FSA/EA), Heidi Andorfer (FSA/EA), Julie Franken (EA) and John Bartz (ASA).

Jason Franken will be the lead actuarial consultant for the Minnesota Legislative Commission Board. He will coordinate the work, deliver results at meetings and conduct special actuarial analyses. He will ensure the work product adheres to the rules, regulations, and guidelines set forth by the United States Government, the State of Minnesota, and the Actuarial Standards of Practice.

Heidi Andorder will assist Jason in leading the project. She will be the lead valuation actuary and will manage the day-to-day activities. Additionally, she will be available to attend meetings and deliver results.

Julie Franken will be the main valuation actuary. She will be responsible for completing the full replications.

Tyler Koftan will assist Julie with the data work and other valuation activity.

John Bartz is the peer review actuary and will provide a final review of all work products before they are delivered to the Minnesota Legislative Commission Board.

4. **References. List five major retirement systems or businesses with defined pension plans by which the actuarial firm previously has been retained, complete with the name and telephone number of a contact person, as references who can be contacted about prior performance of the actuarial firm in providing actuarial services.**

Client Name: Metropolitan Water Reclamation District (Chicago) Retirement Fund
Contact Person: Susan Boutin
Telephone Number: (312) 751-3230

Client Name: Illinois Department of
Insurance Contact Person: Travis March

Telephone Number: (217) 782-1781

Client Name: Florida Division of Retirement
Contact Person: Keith Brinkman
Telephone Number: (877) 738-6737

Client Name: LASERS (Louisiana State Employees' Retirement System)
Contact Person: Cindy Rougeou
Telephone Number: (225) 922-0604

Client Name: Teachers' Retirement System of Louisiana
Contact Person: Maureen Westgard
Telephone Number: (225) 925-6454

5. Client Additions and Subtractions. Provide a list of all new clients added by the actuarial firm and all former clients lost by the actuarial firm during the most recent five-year period.

In the past five years, Foster & Foster has added 58 new clients and only had 9 clients terminate our actuarial services. Please refer to the page labeled, "Client List" for the clients that we have added and lost in the last five years.

6. Firm's Valuation System. Describe the valuation system of the actuarial firm, indicate whether the software proposed to be used has been obtained from an outside vendor or is proprietary software developed by the actuarial firm, and indicate the capabilities and procedures of the actuarial firm to retain prior actuarial valuation and related data.

We use the best actuarial valuation software money can buy. ProVal was developed by WinTech in Greenwich, and is THE state-of-the-art in actuarial valuation software. It is utilized in valuing liabilities for the largest funds in the country and provides updates as needed based on legal and regulatory changes, requested changes from their clients, etc. Each time an update is provided, our firm installs the update to utilize the new features.

This software is also entirely PC-based, which eliminates the time and expense associated with maintaining and operating a mainframe system. This software has a comprehensive database management system designed to accurately prepare and summarize census data for the current

year's valuation, has separate calculation modes for public sector plans that apply the appropriate laws and regulations and is designed to move seamlessly from valuations to deterministic and stochastic forecasts. Beyond the core tasks of running valuations and forecasts, ProVal also offers several analytic tools including: gain/loss analysis, experience studies, and asset/liability modeling.

Foster & Foster has also gone to great lengths to ensure the firm's information technology needs are up to industry standard. The Dell server hardware has been configured with multiple sets of redundant hard disk arrays and multiple power supplies to ensure maximum uptime. All data including email is housed internally to ensure valuable private client data is secure and safe.

Our firm's secure file transfer server allows us to send and receive files containing personal information, such as names and social security numbers, in a HITECH-compliant format. We are also capable of receiving data via email or certified mail. Intrusion detection and firewall prevention is provided by Sonicwall, an industry leader in network intrusion prevention.

In addition, nearly all of our clients' information is logged in our proprietary public sector database. The database contains information that no other actuarial firm has, and can be useful to clients when setting actuarial assumptions, assessing the adequacy and computations of the benefits being offered, or in measuring investment performance relative to comparable funds.

7. Firm's Potential Conflicts of Interest. If the actuarial firm previously has been retained by a statewide or local Minnesota public pension plan, a Minnesota governmental employing unit, a Minnesota public employee labor union, or a comparable party interested in Minnesota public pension policy development, those relationships should be indicated. If the actuarial firm intends to continue any of these prior relationships during the course of a contract with the Commission, address the extent that the relationship constitutes a potential conflict of interest when providing services for the Commission and how the actuarial firm will deal with any actual conflicts.

There are no known conflicts of interest that would prevent us from completing the work requested on behalf of JEA. Foster & Foster does not have a direct or indirect economic or other financial relationship with the Commission. In order to protect our firm from future conflicts of interest, we disallow any of our associates to obtain employment or work for any other outside agency other than Foster & Foster. Furthermore, we require each of our

associates to disclose any other professional activities or personal relationships that they may have with any of our clients or plan sponsors. If conflicts of interest do arise, we follow the procedures outlined in the Actuarial Standards of Practice, which require us to immediately identify all affected parties that a potential conflict of interest does exist. Upon notification, we would require that each impacted party agree to allow us to continue to perform the requested work. Otherwise, we would be forced to resign as our client's actuary until the conflict no longer exists.

While most actuarial firms do not, we agree to be a fiduciary as outlined under ERISA for all of our clients.

8. Most Recent Audited Annual Financial Report. If the actuarial firm is publicly held, provide a copy of the firm's most recent audited annual financial report.

Foster & Foster is a privately held company.

Approach and Work Plan

The actuarial firm must specify how it will provide the required and requested actuarial services within the specified timeframes and must indicate how its staff and the various projects will be organized to carry out the required tasks. Further, the work plan must identify the person who will be assigned overall responsibility for the work and indicate the business office location of that person.

If retained to perform this work, Foster & Foster will begin by requesting all of the necessary data to perform the review and replication of the 2014 valuations. Once we have requested all of the data, we will familiarize ourselves with all of the Funds as well as the Commission's standards for actuarial work. This will be completed immediately so we can help the Commission meet all of its goals and objectives.

After we have received all of the data, we will complete the review and replication of the 2014 valuations prior to April 1, 2015. Our consultants have reviewed and replicated valuations for many years. As a result, we have procedures and templates in place to be as efficient as possible in completing this work.

The review of the actuarial experience studies will be completed within 60 days of the date on which the last of the three experience studies is filed with the Commission. We have included a copy of the experience study we completed for the State of Illinois Department of Insurance. Our valuation software allows us to easily compare actual experience to the assumptions and generate easy to understand exhibits.

The review of actuarial cost estimates of proposed legislation will be completed within seven days. We have worked with multiple State agencies and understand the urgency when proposed legislation is being discussed. We will make this our top priority.

The review of optional annuity form table or annuity reserve factor changes as well as the review of prior service credit purchase calculations will be reviewed within 30 days of the assignment.

To satisfy all the requirements of this contract, Foster & Foster will assign a team of consultants to your account. This staff will be organized as follows:

Jason Franken will be the lead actuary on this project. He will be readily accessible for any phone calls or meetings that the Commission may have. Jason is a Fellow of the Society of Actuaries and an Enrolled Actuary per ERISA. He joined the firm in 2008 and has 17 years

of pension actuarial experience. Jason has spoken at national actuarial conferences and at public pension conferences across the country.

Heidi Andorfer recently joined the firm and has over 18 years of actuarial pension experience. Heidi is both a Fellow of the Society of Actuaries and an Enrolled Actuary per ERISA. Heidi will assist Jason in managing the project, delivering results at meetings, and ensuring that the work product adheres to the rules, regulations, and guidelines set forth by the United States Government, the State of Minnesota, and the Actuarial Standards of Practice.

Julie Franken has more than 13 years of experience as a pension actuary. Julie graduated from the University of Wisconsin – Madison with a Bachelor of Business Administration. She is an Enrolled Actuary per ERISA and works extensively on annual valuations, projections, benefit calculations, and special studies. During her career, Ms. Franken has specialized in the valuation of pension plans. She has developed processes to help streamline the valuation and make it more efficient. Julie will work with the valuation team review and replicate actuarial results, determine impact of proposed legislation and review various actuarial calculations.

Tyler Koftan is a 2011 graduate of the University of Iowa with a B.S. in actuarial science. Tyler recently joined the Foster & Foster team in January of 2013 as an actuarial student. He is working to meet the requirements to achieve the ASA credentials. Tyler's focus will assist Julie with the data and valuation processes.

John Bartz is an actuary with more than 35 years of experience in the consulting industry with broad experience in plan design for Fortune 500 companies and large municipalities. Prior to joining Foster & Foster in 2009, he was a practice leader at Watson Wyatt. John is an Associate of the Society of Actuaries (ASA) and will provide a final review all of the work products before they are delivered the Commission.

How the work of the firm under contract will be coordinated with the Commission staff;

Foster & Foster makes it a priority to be accessible to our clients. We go out of our way to make each of our clients feel like they are our only client. As our references will confirm, we work very closely with them to help solve their problems and are very responsive. Our clients are typically able to reach our consultants at any hour via e-mail, office phone or cell phone.

The personnel who will be responsible for presenting reports and results to the Commission;

Jason Franken will be the lead actuary and be responsible for the presenting the reports and results to the Commission. Heidi Andorfer will be the back-up consultant in case there is a scheduling conflict. Heidi will attend many of the meetings (at no additional charge) with Jason to ensure that we have two consultants that are familiar with the account and can be contacted with questions.

The personnel who will be assigned as replacements in the event of subsequent employment termination;

As described above, we will assign two lead consultants to your account so we will always have multiple people available to provide the necessary consulting services. If one of the two were to leave our firm, Brad Heinrichs, the majority owner and CEO of the Firm, would be added to the client team to ensure all of the actuarial services are completed in a timely manner. Both Brad and Jason have significant equity in the Firm.

Actuarial Services Compensation

The contract will require that the actuarial firm provide all of the actuarial consulting services required by the Legislative Commission on Pension and Retirement.

	Year 1	Year 2	Year 3	Year 4	Year 5
Annual Fee:	$86,000	$89,000	$92,000	$95,000	$98,000

This fee includes the review of eleven (11) retirement plans each year and the full replication of the:

- General State Employees Retirement Plan of the Minnesota State Retirement System in Year 1
- General Employees Retirement Plan of the Public Employees Retirement Association in Year 2
- Teachers Retirement Association in Year 3
- St. Paul Teachers Retirement Fund Association in Year 4
- Public Employees Police and Fire Retirement Plan in Year 5

Review of experience studies for the General State Employees Retirement Plan of the Minnesota State Retirement System, the General Employees Retirement Plan of the Public Employees Retirement Association and the Teachers Retirement Association is $20,000.

The charges for the work other than the annual review of the valuations, review of the experience studies and replication of the five valuations listed above will be based upon the amount of time required to complete each task. We will provide a firm fee quotation prior to commencing any work at the Commission's request. The hourly billing rates during Year 1 of the contract are listed below. These rates are subject to 3% increase each subsequent year of the contract.

Staff	Hourly Rate
Senior Consultant	**$ 300**
Senior Staff	**$ 250**
Junior Staff	**$ 150**
Administrative	**$ 100**

1) **A schedule of current hourly rates that the actuarial firm charges to its other current clients for each level of personnel anticipated to be assigned to this contract;**

   Typically, the rates that we charge for each of our clients is the same as we are proposing for the Minnesota Legislative Commission on Pension and Retirement.

2) **A description of how any out-of-pocket expenses will be charged, if the out-of-pocket expense is not included in the fixed fee or the hourly fee;**

   Up to two (2) meetings per year is included in the fixed fee. Travel for additional meetings will be charged at ½ of the hourly rate plus out-of-pocket expenses.

3) **A description of how any computer expenses will be charged, if the computer expense is not included in the fixed fee or the hourly fee, with an indication of the items that will be includable as computer costs and an indication of the amount of computer charges per time unit;**

   All computer expenses is included in the fixed fee.

4) **A description of how development costs will be charged, if not included in the fixed or hourly fees, and the estimate of development costs arising out of the actuarial services contract for:**
   a) **Any necessary changes to the firm's current computer systems;**

      Any necessary changes to the firm’s current computer system is included in the fixed fee.

   b) **Any necessary changes for data entry;**

      The collection of data is included in the fixed fee. However, if revisions are required and additional data needs to be collected, it will be billed according to our hourly rates.

c) Gaining familiarization with the Minnesota pension plans and systems;

Gaining familiarization with the Minnesota pension plans and systems is included in the fixed fee.

d) Obtaining other data and information necessary to perform actuarial services tasks;

Obtaining all data and information necessary to perform the actuarial task is included in the fixed fee. However, if revisions are required or additional information needs to be collected, it will be billed according to our hourly rates.

5) A description of the firm's billing practices, timing, and procedures

We have several actuaries and staff assigned to each client, and these actuaries all have different billing rates. We also have a non-actuary who is a project manager, who makes sure that the appropriate professional is performing each task. Regardless, our hourly rates are lower than most other actuarial firms.

The charges for the work not explicitly stated would be based upon the amount of time required to complete each task. Travel will be charged at ½ of the hourly rate plus out-of-pocket expenses.

Affirmative Action

In accordance with the provisions of Minnesota Statues, Section 363A.36, no bid for a contract in excess of $100,000 may be accepted from an employer having more than 20 full-time employees at any time during the previous 12 months unless the employer has an affirmative action plan approved by the Minnesota Commissioner of Human Rights. The Commission will not accept a proposal unless it includes one of the following:

1) **A copy of the actuarial firm's current certificate of compliance issued by the Minnesota Commissioner of Human Rights; or**
2) **A notarized statement certifying that the actuarial firm has a current certificate of compliance issued by the Minnesota Commissioner of Human Rights; or**
3) **A notarized statement certifying that the actuarial firm has not had more than 20 full-time employees located in the State of Minnesota at any time during the 12 months prior to submission of the proposal.**

Please refer to the following page for our notarized statement.

FOSTER & FOSTER
ACTUARIES AND CONSULTANTS

June 13, 2014

Mr. Lawrence A. Martin, Executive Director
Legislative Commission on Pensions and Retirement
55 State Office Building
100 Rev. Dr. Martin Luther King Jr. Blvd.
St. Paul, Minnesota 55155

RE: AFFIRMATIVE ACTION

Dear Mr. Martin,

Please accept this document as our statement certifying that Foster & Foster does not or had more than 20 full-time employees at any time located in the State of Minnesota at any time during the 12 months prior to submission of this proposal.

Thank you and please do not hesitate to contact me if you have any questions.

Sincerely,

Jason Franken, FSA, EA, MAAA
Foster & Foster, Inc.

6/13/2014
Date

ACKNOWLEGEMENT

STATE OF ILLINOIS
COUNTY OF DUPAGE

The foregoing instrument was acknowledged before me this 13th day of June, 2014, by Jason Franken who is

____ personally known OR __X__ produced identification

Type of identification produced Driver's License.

(NOTARY SEAL)

OFFICIAL SEAL
MELODY A LAWRENCE
NOTARY PUBLIC - STATE OF ILLINOIS
MY COMMISSION EXPIRES:05/04/15

Signature of Notary

Melody A. Lawrence
Printed name of Notary

Workers' Compensation

The successful proposer must submit acceptable evidence of compliance by the actuarial firm with the workers' compensation insurance coverage requirements of Minnesota law for any Minnesota employees before the execution of the contract.

Not applicable - We do not have any Minnesota employees.

Client List

FOSTER & FOSTER
ACTUARIES AND CONSULTANTS

PUBLIC PENSION PLANS
Won in the Last 5 Years

Client Name	Retention (Years)
BELLE GLADE HOUSING AUTHORITY	<1
BOCA RATON POLICE & FIRE	< 1
HIALEAH EMPLOYEES RETIREMENT SYSTEM	<1
HOLLYWOOD FIRE	<1
AUSTIN POLICE	1
BEAUMONT FIRE	1
DEERFIELD BEACH POLICE	1
DEPARTMENT OF INSURANCE, STATE OF ILLINOIS	1
FT LAUDERDALE POLICE & FIRE	1
INDIAN RIVER SHORES PUBLIC SAFETY	1
METROPOLITAN WATER DISTRICT	1
OAKBROOK FIRE	1
PALM BEACH GARDENS FIRE	1
SPRINGFIELD FIRE	1
WEST MELBOURNE POLICE	1
AUSTIN FIRE	2
BARRINGTON POLICE	2
BLUE ISLAND FIRE	2
BLUE ISLAND POLICE	2
CHATHAM FIRE	2
COLLINSVILLE FIRE	2
DECATUR FIRE	2
EDWARDSVILLE FIRE	2

HINSDALE POLICE	2
LANE REGIONAL MEDICAL CENTER	2
LONGVIEW FIRE	2
LOUISIANA STATE EMPLOYEES RETIREMENT SYSTEM	2
MAITLAND POLICE AND FIRE	2
NEW SMYRNA BEACH POLICE	2
PALMETTO POLICE	2
SEBASTIAN POLICE	2
ST LUCIE COUNTY FIRE	2
ST LUCIE COUNTY GENERAL	2
TAVARES FIRE	2
TAVARES POLICE	2
TEACHERS RETIREMENT SYSTEM OF LOUISIANA	2
WOOD RIVER FIRE	2
WOOD RIVER POLICE	2
BOLINGBROOK FIRE	3
HALLANDALE BEACH POLICE & FIRE	3
JONESBORO GENERAL	3
NORTH NAPLES FIRE	3
PALMETTO GENERAL	3
WINTER GARDEN GENERAL	3
WINTER GARDEN POLICE AND FIRE	3
CICERO FIRE	4
COOPER CITY MGMT EMPLOYEES	4
DELRAY BEACH POLICE & FIRE	4
DELTONA FIRE	4
DUNEDIN FIRE	4
EAST NAPLES FIRE	4

KISSIMMEE FIRE	4
NORTH PALM BEACH POLICE & FIRE	4
PENSACOLA FIRE	4
LEESBURG FIRE	5
NAPLES FIRE	5
NAPLES GENERAL	5
NAPLES POLICE	5

FOSTER & FOSTER
ACTUARIES AND CONSULTANTS

PUBLIC PENSION PLANS
Lost in the Last 5 Years

Client Name

Lake Mary Fire, lost 5/28/09, no formal explanation was given.

Southern Manatee Fire, lost 3/10/09 hired a single source provider for all actuarial, custodial, legal, and investment services.

Apopka Police, hired a single source provider for all actuarial, custodial, legal, and investment services.

Apopka General, hired a single source provider for all actuarial, custodial, legal, and investment services.

Apopka Fire, hired a single source provider for all actuarial, custodial, legal, and investment services.

City of Palm Beach Gardens General Employee Pension Trust Fund, lost in 2010, hired single source provider for all administration, actuarial and investment services.

City of Temple Terrace, lost in 2010, reason was fees.

Children's Home Society of Florida, Hired a single source provider of administrative, actuarial and investment services.

City of Fort Myers, Chose the lowest cost provider for GASB 43/45 services.

Sample Reports

ACTUARIAL VALUATION
June 30, 2013

November 5, 2013

Ladies and Gentlemen:

This report presents the results of the actuarial valuation of assets and liabilities, as well as funding requirements, for the as of June 30, 2013. The format of this report was designed with the intent of highlighting the pertinent results of the valuation and funding requirements.

In preparing this valuation, we have relied upon the information provided by the System regarding plan provisions, plan membership data, plan assets and other matters as detailed in the exhibits of this report. In particular, we have relied upon the statement of assets provided by Hawthorn, Waymouth and Carroll, Certified Public Accountants. We did not audit the data or plan assets but reviewed for reasonableness and consistency with prior year data. Our review concluded that the data is reasonable and consistent with the prior year's data.

The present values shown herein have been estimated on the basis of the actuarial cost method specified in Revised Statutes Title 11 Section 22(13). All actuarial assumptions have been adopted by the Board of Trustees and are reasonable and appropriate for the purposes of this valuation. However, the use of another set of assumptions and methods could also be reasonable and could produce materially different results. Actual results may vary from assumptions used to prepare the valuation.

Exhibit 3, "Pension Accounting and Financial Disclosure", contains disclosure of the accrued liabilities required by the Governmental Accounting Standards Board Statement No. 25. This report has been prepared in accordance with actuarial standards of practice, and to the best of our knowledge, fairly reflects the actuarial present value of accrued benefits of the .

Shelley is an Associate in the Society of Actuaries and Brad is a Fellow in the Society of Actuaries. Shelley and Brad are members of the American Academy of Actuaries and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

Respectfully submitted,

FOSTER & FOSTER INC.

Shelley R. Johnson

Shelley R. Johnson, ASA, MAAA

Bradley R. Heinrichs, FSA, EA, MAAA

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SUMMARY OF VALUATION RESULTS

A brief summary of the more important figures developed in this valuation, with comparable results from previous valuations is as follows:

I.	Membership Census			
	1) Retirees	71,031	67,657	65,512
	2) Actives	82,910	84,513	86,742
	3) DROP	2,451	2,637	3,032
	4) Terminated Vested	5,991	6,439	5,852
II.	Annual Benefits	$1,644,237,684	$1,548,631,764	$1,471,714,284
III.	Current Payroll			
	Regular Teachers	3,155,147,352	3,220,120,617	3,418,593,800
	Higher Education	546,602,349	562,139,355	452,162,646
	Lunch A	1,755,008	2,610,172	6,388,920
	Lunch B	22,821,041	23,890,450	25,501,168
	Total	3,726,325,750	3,808,760,594	3,902,646,534
IV.	Valuation Assets	14,669,155,950	13,584,408,961	13,286,294,879
V.	Investment Yield			
	Market Value (Total Assets)	12.57%	-0.39%	24.91%
	Market Value (Excl LaDROP Assets)	12.79%	-0.32%	25.55%
	Actuarial Value	13.41%	5.05%	6.44%
	DROP	12.91%	4.55%	5.94%
VI.	Experience Account	219,736,906	0	0
VII.	Total Normal Cost [1]	485,140,427	521,143,768	555,850,391
	Total Normal Cost (% of Payroll) [1]	13.02%	13.68%	14.24%
	Employer Normal Cost (% of Payroll)	5.04%	5.22%	5.81%
VIII.	Unfunded Actuarial Accrued Liability	11,348,552,354	10,955,670,910	10,810,458,897
IX.	Funded Percentage	56.4%	55.4%	55.1%
X.	Funding Requirements (Mid-year Pmt)			
	1) Employee Contribution	302,615,214	312,565,974	320,347,489
	Reg Teachers/Higher Ed	8.00%	8.00%	8.00%
	Lunch Plan A	9.10%	9.10%	9.10%
	Lunch Plan B	5.00%	5.00%	5.00%
	2) Employer Contribution	1,155,693,972	1,088,298,250	1,064,568,518
	Aggregate Rate (Current Year) [2]	27.3%	25.0%	24.0%
	3) Projected Employer Contribution	1,208,736,413	1,211,086,287	1,116,280,330
	Aggregate Rate (Next Year) [3]	27.7%	27.1%	24.5%

The above funding requirements measure the cost of benefits that were in effect on June 30, 2013, and Acts of the 2013 Regular Legislative Session.

[1] Excludes projected administrative expenses beginning June 30, 2013. This is a reporting change, not a funding change.

[2] Reflects the restated aggregate employer contribution rate for the fiscal year following the valuation, as determined by the current year valuation.

[3] Reflects the projected aggregate employer contribution rate for fiscal year that begins one year after the valuation date.

Projected Contribution Rates by Plan:

Act 716 of the 2012 Regular Legislative Session requires the employer rate to be individually determined for each plan type as defined within the Act beginning with Fiscal Year 2012/2013. The term "plan" is used to define each employer group defined in the Act, and not to imply that each group has a separate plan of benefits. The normal cost portion of each plan's employer contribution rate varies based upon that plan's benefits, member demographics, and the rate contributed by employees. The shared UAL contribution rate is determined in aggregate for all plans. The UAL established due to a specific plan or group of plans due to legislation will be allocated entirely to that plan or those plans. The employer rates by plan are as follows:

	Recommended Employer Rate for FY 14/15					
	Total Normal Cost Rate	Employee Normal Cost Rate	Employer Normal Cost Rate	Shared UAL Rate	Particularized UAL Rate	**Total Employer Contribution Rate**
Regular Teachers	13.3%	8.0%	5.2545%	22.7%	0.0%	**28.0%**
Higher Education	11.7%	8.0%	3.6658%	22.7%	0.0%	**26.4%**
Lunch Plan A	19.5%	9.1%	10.4157%	22.7%	0.0%	**33.1%**
Lunch Plan B	12.4%	5.0%	7.4148%	22.7%	0.0%	**30.1%**
Aggregate Rate	13.0%	8.0%	5.0371%	22.7%	0.0%	**27.7%**

The reduction in the Higher Education Normal Cost rate from the prior year's valuation is a result of the increase in assumed withdrawal rates, following the experience study recently adopted by the Board. The variation in normal cost by plan reflects differences in benefits, actuarial assumptions, and member demographics based on the projected unit credit cost method, as required by statutes. One aspect of this method is that the average normal cost tends to increase as the average age of plan members increases. The aggregate normal cost rate would be expected to remain fairly level if the average membership age for all plans remains level. The entry age normal cost method would result in more stable funding requirements by plan in the event of changing demographics.

Changes in Funding Requirements and UAL

The basic elements of the annual required contribution are the normal cost and amortization of the Unfunded Actuarial Liability (UAL). The normal cost is the annual cost to provide an additional year of benefit accrual. The normal cost is divided into the employee portion and the employer portion, both expressed as a percentage of payroll. Statutes provide for the amortization of the IUAL plus subsequent changes in benefits, methods or gain/loss experience.

The Actuarial Valuation for the plan year ending June 30, 2013, discloses an increase in the value of the plan's unfunded accrued liability and a decrease in prospective funding requirements. However, the required employer contribution as a percentage of payroll has increased. Changes in the required contribution are usually the result of changes in actuarial assumptions, and/or gains or losses resulting from actual experience differing from expected plan experience, and expected changes in the UAL payment due to statutory requirements. Changes in the employer contribution rate are impacted by both the change in the total dollar required contribution and by the total aggregate payroll for active members. The changes most affecting the increase in liability are the decrease in the discount from 8.25% to 8.00% and the change in mortality assumptions. The increase was partially offset by an investment experience gain relative to the assumed actuarial rate, the increase in assets that resulted from the change in the asset valuation method, and an experience gain from assumptions other than the investment assumption. The increase in the projected employer rate was due to many factors, as shown below.

The total of the items contributing to the contribution rate change may not exactly equal the actual contribution rate change due to rounding and since the items impacting the rate do not operate in isolation of each other, hence are not additive.

Aggregate Contribution Rate Change from FY 13/14 to FY 14/15

Normal Cost (demographic change)	0.0%
Normal Cost (experience study assumption change)	-0.7%
UAL Payment	
Investment Experience Gain	-1.3%
Other Experience Gain	-0.1%
Asset Valuation Method Change	-0.1%
Experience Account Allocation	0.5%
Experience Study Assumption Change	0.7%
Statutory UAL Payment Increase	0.9%
Contribution Variance Payment Change	0.4%
Payroll Change	0.7%
Total	0.8%
Actual Contribution Rate Change	0.6%

A reconciliation of the change in the UAL from the prior year is shown below:

Change In Unfunded Actuarial Accued Liability

Unfunded Liability - June 30, 2012		$ 10,955,670,910
Interest on Unfunded Liability	$ 903,842,850	
Employer Amortization Payment	(919,796,518)	
Contribution Variance	11,400,601	
Net Investment Experience Gain [1]	(588,100,617)	
Other Experience Gain	(54,510,474)	
Experience Account Allocation	219,736,906	
Assumption Changes (discount rate)	580,606,082	
Assumption Changes (experience study changes)	291,075,809	
Asset Valuation Method Change	(51,373,196)	
Total Change		392,881,444
Unfunded Liability - June 30, 2013		$ 11,348,552,354

The aggregate employer contribution rate established by the Public Retirement Systems' Actuarial Committee for the 2013/2014 plan year was 27.1%. The restated employer contribution rate determined by this valuation for the 2013/2014 plan year is 27.3%. Therefore, an employer contribution deficit of 0.2% is expected in next year's valuation.

Legislative/Plan Changes

Act 483 of 2012 created a cash balance plan for all Higher Education members whose first employment for membership in a state retirement system affected by the Act occurred on or after July 1, 2013. The plan was suspended to July 1, 2014, during the 2013 legislative session. On June 28, 2013, the Supreme Court ruled that the plan enacted in 2012 required a two-thirds vote of the legislature, which did not occur, so was unconstitutional. Given the Supreme Court's ruling, the plan will not take effect.

Actuarial Assets/Valuation Assets

Because the market value of assets can be volatile from one year to the next, an asset valuation method is generally used to adjust the market value of assets to smooth the effects of short-term volatility. The adjusted asset value is called the actuarial value of assets. The Board adopted a change in the asset valuation method, effective for the June 30, 2013 valuation. The method changed from smoothing (or gradually recognizing) unrealized appreciation/depreciation over four years to smoothing investment gains/losses relative to the assumed rate over five years. Under the current method, an increase in asset turnover may cause a significant change in the actuarial value of assets. The change was recommended in order to eliminate this aspect, to decrease contribution rate volatility even more so than current method by smoothing over five years rather than four, to bring continuity between other State and Statewide retirement systems that have recently changed to this method, and to allow for better prediction of the impact of changes in funding requirements due to investment results.

The net increase in the actuarial value of assets due to the change in method, after adjusting for excess interest to be credited to DROP accounts, is $51,373,196. If the change had not occurred, this increase in assets would have been recognized gradually over the next 3 years. Since the increase in assets is accelerated recognition of prior year's investment experience gains/losses not yet recognized, a portion of this change will be allocated to the experience account. This change, less the portion allocated to the Experience Account, will be amortized over 30 years with level payments.

The gross actuarial assets represent the total assets to fund all liabilities of the pension plan as well as side-fund accounts dedicated for other purposes. The valuation assets exclude the side-fund accounts for purposes of determining the employer contribution rate as illustrated in Exhibit 2.

The side-fund accounts excluded from valuation assets are as follows:

- **Employer Credit Account:** This account, established by Act 588 of 2004, is credited with the excess of the contributions at the statutory minimum rate of 15.5% over the Actuarially Required Contribution (ARC). The account continues to have a zero balance.

- **LSU Agriculture and Extension Service Fund:** Participants of the LSU Agriculture and Extension Service receive supplement benefits from TRSL equal to the difference between the TRSL benefit formula and the Federal Civil Service formula. The funding is recorded separately in the side-fund with assets co-mingled with the actuarial value of assets. The current balance is $1,322,042.

- **Experience Account Fund:** The account is used to fund permanent benefit increases for retirees. Fifty percent of any excess return above $200,000,000 will be credited to the Experience Account. The benefit increase granted must be funded at 100% of the actuarial cost. The account balance is restricted to the reserve for two permanent benefit increases. The current balance of the fund is $219,736,906, the value of the allocation on June 30, 2013.

Plan Experience

The actuary is charged with recommending actuarial assumptions based on the best estimate of future plan experience to properly fund future benefits. These assumptions, which are adopted by the Board of Trustees, are detailed in Exhibit 6 of the valuation report. The results of the actuarial valuation are dependent on the actuarial assumptions used. 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, and changes in plan provisions or applicable law. If the actual experience differs from the projected experience, a gain or loss occurs. This gain or loss is then amortized over a thirty year period with level dollar payments.

Economic/Investment Experience

For the plan year ending June 30, 2013, the realized actuarial rate of return of 13.41% exceeded last year's assumed rate of 8.25%, used to discount benefits. This return is based upon the June 30, 2013 actuarial value of assets, which includes the change in asset valuation method. Therefore, the actuarial rate of return includes investment returns recognized in the prior plan year due to the change in method. The result was a net investment experience gain of $588,100,617 relative to projected investment income, based on the actuarial value of assets prior to changing the asset valuation method. The additional net gain of $51,373,196 due to the method change, after adjusting for the experience account allocation, will be amortized as a separate base. Both gains are net of the interest to be credited to DROP accounts.

Per Act 497, if the actuarial return exceeds the assumed rate, the first $100,000,000 of investment gains will be used to reduce and re-amortize the OAB. The next $100,000,000 of investment gains will be used to reduce and re-amortize the EAAB. Fifty percent of any additional excess return is credited to the Employee Experience Account. Therefore, the investment experience gains described above, less the portion allocated to the Experience Account, will be amortized over 30 years with level payments.

The historical geometric average rates of return on the actuarial value of assets, net of investment expenses, for plan years ending June 30 are as follows:

	Actuarial Rate of Return		Geometric Average
2009	-12.31%	5 Year	1.96%
2010	-0.89%	10 Year	6.42%
2011	6.44%	20 Year	7.30%
2012	5.05%	25 Year	7.93%
2013	13.41%	30 Year	8.54%

Demographic Experience and Salary Assumptions

Demographic assumptions include rates of retirement/DROP, rates at which members become disabled, turnover rates, mortality rates, and several other demographic assumptions. Salary assumptions anticipate future salary increases. During the 2012/2013 plan year, the system incurred an experience gain of $54,510,474 from plan experience differing from that anticipated by the demographic and salary assumptions.

Assumption Changes:

In addition to experience gains or losses, changes in actuarial assumptions or methods can also impact contribution rates. The change in the discount rate from 8.25% to 8.00% increased plan liabilities by $580,606,082. A five year experience study was completed in April 2013 based on TRSL's experience through June 30, 2012. All demographic assumptions and salary assumptions were reviewed relative to recent plan experience. As a result of this study, changes to the actuarial assumptions were recommended to the Board of Trustees and adopted. All changes are described in Exhibit 6 of this report. The change in assumptions resulting from the experience study increased plan liabilities by $291,075,809. The combined effect of all assumption changes is an increase in plan liabilities of $871,681,891, which impacts the UAL by the same amount. This change will be amortized with 30 year level dollar payments.

Funding of Administrative and Investment Expenses

The employer contribution rate is determined in accordance with R.S. 11 Section 102, which by omission of language regarding the funding of administrative expenses precludes funding of these expenses by a direct allocation through the employer contribution rate. These expenses are instead funded through the employer rate with the 30 year amortization of the experience loss.

Investment manager fees are treated as a direct offset to investment income.

Funding of Future Post Retirement Benefit Increases

The liability for previously granted benefit increases is included in the retiree reserve. law pertaining to TRSL retiree benefit increases provides for the funding of future increases by requiring the automatic transfer of a portion of excess investment earning to the Experience Account. The law does not provide for automatic benefit increases. Many conditions must be met before an increase can be granted, as described in the Post Retirement Increases section of the Summary of Plan Provisions in Exhibit 5 of this report. The legislature has the ultimate authority as to whether or not a future increase will be granted. Since a portion of investment earnings will be used to fund these benefits, which are not accrued benefits of the plan, the accrued benefits are discounted using a net discount rate. The net discount rate is determined as the gross expected long-term return less investment expenses and the expected return used to provide for future retiree benefit increases. The expected return used to determine the value of gain-sharing reflects TRSL specific gain sharing provisions: 50% of investment gains, determined using the actuarial value of assets, above the statutory hurdle of $200 million. While the liabilities in this report do not explicitly include liabilities for future retiree benefit increases, the assumptions recognize that investment earnings will be diverted to fund benefits other than plan accrued benefits. Therefore, the employer contributions include the value of TRSL provisions for future retiree benefit increases. This disclosure is provided in accordance with Actuarial Standards of Practice No. 4.

Future Funding as a Percentage of Payroll

The employer pays a percentage of the normal cost, excluding administrative expenses, plus a dollar amount sufficient to amortize the unfunded liability. Per constitutional provisions, the employer contribution rate cannot drop below 11.8%, without regard to employer credits, and without a corresponding adjustment to the employee contribution rate. Per statutory provisions, the employer contribution rate cannot drop below 15.5%.

Normal Cost

Act 992 of 2010 revised benefits for TRSL members (excluding Lunch Plan members) whose first employment makes them eligible for membership in a State retirement system on or after January 1, 2011. These members are eligible for regular retirement after attaining age sixty with at least five years of service credit and eligible for disability retirement after accruing ten years of service credit, a change from the five year requirement for all other members. Final average compensation is based on the highest sixty months, versus thirty-six months for all other member. Membership in this plan will gradually increase as current members retire or terminate service and new members enroll. The ultimate expected normal cost rate reduction, once all members are enrolled in the new plan, is 1.30% of pay. The savings will be realized gradually as the membership in this plan increases.

UAL Payments

Future payments to amortize the Original Amortization Base (which includes the Initial Unfunded Accrued Liability), the Experience Account Amortization Base will increase as shown in the following table, as required by Act 497 of 2010. All other schedules will have level payments.

Plan Year	Original Amortization Base	Experience Account Amortization Base
2013/2014	7.0%	7.0%
2014/2015 – 2017/2018	6.5%	6.5%
2018/2019 +	2.0%	Level Payments

If aggregate payroll increases at the same rate as the increase in amortization payments, this would allow the employer contribution rate attributable to the amortization payments to maintain a level percentage of payroll. The aggregate UAL payments for all schedules is shown in exhibit 7-C.

EXHIBIT 1

DEVELOPMENT OF COSTS, LIABILITIES AND CONTRIBUTIONS

Normal Costs and Accrued Liabilities are calculated in accordance with the Projected Unit Credit Actuarial Cost Method, and the Actuarial Assumptions outlined in Exhibit 6 based on the Provisions of the Plan as summarized in Exhibit 5.

	June 30, 2013		---- Prior Year ---- June 30, 2012	
	Dollar Amount	% of Salary	Dollar Amount	% of Salary
I. Normal Costs (annual pension accruals)				
Active Members with Complete Data				
a) Retirement Benefits	376,149,702	10.09%	400,168,156	10.51%
b) Disability Benefits	12,346,039	0.33%	13,636,985	0.36%
c) Survivor Benefits	9,953,472	0.27%	11,373,584	0.30%
d) Voluntary Termination	86,691,214	2.33%	77,565,043	2.04%
e) Expenses [1]	0	0.00%	18,400,000	0.48%
TOTAL	485,140,427	13.02%	521,143,768	13.68%
II. Actuarial Accrued Liability				
a) Active Members				
1) Retirement Benefits	6,089,231,315		6,196,601,462	
2) Disability Benefits	142,775,895		166,406,007	
3) Survivor Benefits	117,858,857		136,903,174	
4) Voluntary Termination	593,646,964		529,779,407	
	6,943,513,031		7,029,690,050	
b) Retired and Inactive Members				
1) Regular Retirees	14,316,669,060		12,579,520,901	
2) Disability Benefits	381,873,693		362,653,262	
3) Survivors	880,416,660		789,779,038	
4) Vested Deferred [2]	257,044,615		417,025,887	
5) Contributions Refunded [3]	118,843,083		119,287,734	
6) DROP Deferred Benefits	1,970,606,145		2,083,175,860	
7) DROP Account Balances	1,148,742,017		1,158,947,138	
	19,074,195,273		17,510,389,821	
c) Total	26,017,708,304		24,540,079,871	

[1] Total Normal Cost excludes projected administrative expenses beginning June 30, 2013. Employer normal cost has historically excluded administrative expenses so this is a reporting change, not a funding change.

[2] Includes pending Retirement/DROP applications.

[3] Includes terminated employee and rehired retiree contributions to be refunded.

Exhibit 1 (Continued)
Costs, Liabilities & Contributions

	June 30, 2013	---- Prior Year ---- June 30, 2012
II. Actuarial Accrued Liability	26,017,708,304	24,540,079,871
III. Valuation Assets	14,669,155,950	13,584,408,961
IV. Unfunded Actuarial Accrued Liabilities - Projected Unit Credit [1]	11,348,552,354	10,955,670,910
a) Change over prior year	392,881,444	145,212,013
b) Funded Percentage	56.4%	55.4%
V. Employer Contributions To Fund Current Plan Year [1]		
a) Employer Portion of Normal Cost	190,977,962	204,246,255
b) Amortization Payments	911,127,344	858,114,105
c) Prior Contribution Variance	53,588,666	25,937,890
Total Required Contribution	1,155,693,972	1,088,298,250
Total Contribution Rate	27.3%	25.0%
PERSAC Approved rate [1]	27.1%	24.5%
Aggregate Employer Normal Cost Rate	5.0371%	5.2166%
VI. Projected Employer Contributions To Fund Next Plan Year [1]		
a) Employer Portion of Normal Cost	196,882,998	230,715,099
b) Amortization Payments	944,321,418	923,067,377
c) Prior Contribution Variance	67,531,997	57,288,938
Total Required Contribution	1,208,736,413	1,211,071,414
Total Contribution Rate	27.7%	27.1%
Projected Aggregate Employer Normal Cost Rate	5.0371%	5.7423%
VII. Current Payroll	3,726,325,750	3,808,760,594
Projected Payroll - Mid Year	3,791,250,659	3,915,342,521
Projected Payroll - Next Year	3,908,476,069	4,017,843,743
ORP - Salary Adjustment Factor [2]	1.14051	1.14345

[1] Dollar Amounts reflect estimated payments due mid-year on January 1st per Act 81. Constitutional Minimum is ll.8% without regard to the statutory minimum of 15.5%.

[2] The ORP salary adjustment factor is used to convert amortization payments to percentage of payroll.

EXHIBIT 2

FINANCIAL SUMMARY
STATEMENT OF REVENUES AND EXPENSES
FOR FISCAL YEAR ENDING

		----- Prior Years -----		
	June 30, 2013	**June 30, 2012**	**June 30, 2011**
OPERATING REVENUES:			
1. **Contribution Income**			
Member	$ 327,767,936	$ 333,908,454	$ 342,323,329
Employer	980,403,146	974,089,064	850,730,025
Legis Appropriations	0	0	0
Other Appropriations	43,000	44,944	42,351
ORP - Unfunded	111,013,985	107,420,377	89,760,676
LSU Coop/Ext	2,059,554	1,903,781	1,761,453
Miscellaneous	1,963,081	1,179,565	1,384,436
TOTAL CONTRIBUTIONS	1,423,250,702	1,418,546,185	1,286,002,270
2. **Investment Income**			
Investments	1,787,459,766	-25,752,161	2,975,945,440
Less Advisor Fees	-32,476,075	-30,488,685	-29,952,344
TOTAL INVESTMENT INCOME	1,754,983,691	-56,240,846	2,945,993,096
3. Total Revenues	3,178,234,393	1,362,305,339	4,231,995,366
OPERATING EXPENSES:			
1. General Administration [1]	17,284,820	18,424,626	17,652,431
Other Expenses	377,149	440,291	537,060
2. Benefits Paid			
a) Pension Benefits	1,800,166,804	1,682,528,254	1,615,778,191
b) Return of Contrib.	59,152,481	49,139,028	42,248,487
TOTAL BENEFITS PAID	1,859,319,285	1,731,667,282	1,658,026,678
3. Total Expenses	1,876,981,254	1,750,532,199	1,676,216,169
NET MARKET VALUE INCREASE:	1,301,253,139	-388,226,860	2,555,779,197

[1] The 2011, 2012, and 2013 General Administration operating expense includes $1,477,395, $1,050,097, and $974,146 respectively for Other Post-Employment Benefits (OPEB).

EXHIBIT 2 (Continued)
Financial Summary

FINANCIAL SUMMARY
STATEMENT OF ASSETS
FOR FISCAL YEAR ENDING

		----Prior Years---	
ASSETS:	**June 30, 2013**	**June 30, 2012**	**June 30, 2011**
1. Short Term Assets			
Cash in Banks	$ 199,799,910	$ 198,662,009	$ 195,123,547
Short Term Secutities	1,005,978,360	884,290,767	738,220,668
2. Bonds			
Domestic issues	1,611,411,082	1,477,406,933	1,374,952,322
Foreign Issues	1,162,848,924	972,447,063	669,538,563
3. Equities (at market)			
Domestic	4,322,095,263	3,794,815,270	3,975,570,172
International	3,148,691,961	2,904,306,050	4,094,745,522
Private Equity	3,927,445,271	3,874,754,802	3,371,913,438
4. Other Assets			
Fixtures/Properties	4,027,869	4,148,693	4,298,781
Receivables less Payables	107,938,220	78,152,134	152,847,568
TOTAL ASSETS - Market Value	15,490,236,860	14,188,983,721	14,577,210,581
Cost Value	14,874,504,768	14,323,159,913	13,973,613,138

ACTUARIAL VALUE OF ASSETS

The Board of Trustees adopted a new asset valuation method, effective June 30, 2013. The prior method of determining the actuarial value of assets was the market value of assets adjusted for a four year weighted average of the unrealized gain or loss in the value of all assets. Realized gains and losses were immediately recognized. The adjusted asset value was subject to Corridor Limits of 80% to 120% of the Market Value of Assets. Due to this method's differing treatment of realized and unrealized gains and losses, an increase in asset turnover may cause a significant change in the actuarial value of assets.

The recently adopted method adjusts the market value of assets to gradually recognize investment gains and losses relative to the net assumed investment return, over a 5 year period in 20% increments. The adjusted asset value is subject to Corridor Limits of 80% to 120% of the Market Value of Assets.

EXHIBIT 2 (Continued)
Financial Summary

ACTUARIAL VALUE OF ASSETS (Prior Method):

ASSETS	June 30, 2013	June 30, 2012	June 30, 2011
Market Value of Assets	$ 15,490,236,860	$ 14,188,983,721	$14,577,210,581
Change in Unrealized Appreciation:			
Current Year -2	1,840,353,873	948,357,108	(2,255,233,815)
Current Year -1	(737,773,635)	1,840,353,873	948,357,108
Current Year	749,908,284	(737,773,635)	1,840,353,873
Preliminary Actuarial Value of Assets	$ 14,836,603,996	$ 13,585,047,734	$13,286,575,076
CORRIDOR LIMITS			
Minimum = 80% of Market Value	12,392,189,488	11,351,186,977	11,661,768,465
Maximum = 120% of Market Value	18,588,284,232	17,026,780,465	17,492,652,697
Actuarial Value of Assets	$ 14,836,603,996	$ 13,585,047,734	$13,286,575,076

ACTUARIAL VALUE OF ASSETS (New Method, Effective 6/30/2013):

Plan Year	Asset G/L	Deferred %	Deferred $
2010	$ 382,530,364	20%	$ 76,506,073
2011	1,970,321,330	40%	788,128,532
2012	(1,245,166,296)	60%	(747,099,778)
2013	603,108,919	80%	482,487,135
			$ 600,021,962

Market Value of Assets	$ 15,490,236,860
Deferred Asset G/L	600,021,962
Preliminary Actuarial Value of Assets	$ 14,890,214,898
CORRIDOR LIMITS	
Minimum = 80% of Market Value	$ 12,392,189,488
Maximum = 120% of Market Value	18,588,284,232
Actuarial Value of Assets	$ 14,890,214,898

Actuarial Value of Assets - Prior Method	$ 14,836,603,996
Actuarial Value of Assets - New Method	$ 14,890,214,898
Change in AVA due to Change in Method	$ 53,610,902

INVESTMENT YIELD	June 30, 2013	June 30, 2012	June 30, 2011
Yield to Actuarial Value [1]	13.41%	5.05%	6.44%
Five Year Actuarial Value [1]	1.96%	0.43%	2.30%
Yield to Market Value	12.79%	-0.32%	25.55%
DROP Account Yield	12.91%	4.55%	5.94%

[1] Yield values exclude DROP account assets invested in Money Market accounts.

EXHIBIT 2 (Continued)
Financial Summary

FINANCIAL SUMMARY
STATEMENT OF ASSETS
FOR FISCAL YEAR ENDING

		---- Prior Years ----	
	June 30, 2013	**June 30, 2012**	**June 30, 2011**
EMPLOYER CREDIT ACCOUNT [1]:			
Prior Year Ending Balance	$ -	$ -	$ -
+ Contributions	-	-	-
- Disbursements	-	-	-
+ Accumulated Interest	-	-	-
Account Balance - Year End	-	-	-
LSU AG/EXT SERVICE:			
Prior Year Ending Balance	$ 638,773	$ 280,197	$ 107,621
+ Contributions	2,059,554	1,903,781	1,761,453
- Benefit Disbursements	1,632,154	1,615,226	1,656,739
+ Accumulated Interest	255,869	70,021	67,862
Account Balance - Year End	1,322,042	638,773	280,197
EXPERIENCE ACCOUNT FUND:			
Prior Year Ending Balance	$ -	$ -	$ -
+ Experience Account Allocation	219,736,906	-	-
- Benefit Disbursements	-	-	-
+ Accumulated Interest	-	-	-
Fund Balance - Year End	219,736,906	-	-
DEVELOPMENT OF VALUATION ASSETS:			
Actuarial Value of Assets	14,890,214,898	$ 13,585,047,734	$ 12,868,591,177
- Employer Credit Account	-	-	-
- LSU Ag/Ext Service Account	1,322,042	638,773	107,621
- Experience Account Fund	219,736,906	-	-
Valuation Assets	14,669,155,950	13,584,408,961	12,868,483,556

[1] The Employer Credit Account was created by Act 588 of 2004.

EXHIBIT 3

PENSION ACCOUNTING
AND
FINANCIAL DISCLOSURE

The Governmental Accounting Standards Board (GASB) was established as an arm of the Financial Accounting Foundation in April, 1984 by amendment to the Foundation's certificate of incorporation and by-laws. GASB's objective is to promulgate standards of financial accounting and reporting relative to the activities and transactions of state and local governmental entities. The following disclosures and statistical tables are in accordance with the GASB's Statement No. 25.

(Dollar amounts in thousands)

Actuarial Valuation Date	Actuarial Value of Assets[1] (a)	Actuarial Accrued Liability (AAL) (b)	Unfunded AAL (UAAL)[2] (b-a)	Funded Ratio (a/b)	Covered Payroll (c)	UAAL as a Percentage of Payroll (b-a)/(c)
2004	11,409,404	18,067,486	6,658,082	63.1%	3,017,087	220.7%
2005	12,082,682	18,699,765	6,617,083	64.6%	3,132,169	211.3%
2006	13,088,358	19,390,781	6,302,423	67.5%	2,892,959	217.9%
2007	14,812,298	20,772,330	5,960,032	71.3%	3,224,566	184.8%
2008	15,507,834	22,090,516	6,582,683	70.2%	3,675,014	179.1%
2009	13,500,766	22,839,411	9,338,645	59.1%	3,912,326	238.7%
2010	12,868,484	23,674,842	10,806,358	54.4%	3,977,819	271.7%
2011	13,286,295	24,096,754	10,810,459	55.1%	3,902,647	277.0%
2012	13,584,409	24,540,080	10,955,671	55.4%	3,808,761	287.6%
2013	14,669,156	26,017,708	11,348,552	56.4%	3,726,326	304.6%

The total actuarial accrued liability, determined using the Projected Unit Credit cost method, increased by $1,477,628,433 from June 30, 2012, to June 30, 2013. There was a net experience gain to the fund from all sources of $693,984,286. This includes the increase in assets due to the change in asset valuation method. A portion of the increase in assets due to investment earnings was allocated to the Experience Account rather than to reduce the unfunded actuarial accrued liability. See page 4 for complete allocation of change in UAAL.

[1] The Actuarial Value of Assets for GASB reporting includes the Employer Credit Account Assets, if any, in the Valuation Assets (see page 12).

[2] UAAL differs from the UFAL for funding purposes. UFAL for funding purposes excludes the Initial UAL Amortization Fund Assets and the Employer Credit Account Assets (see page 12).

EXHIBIT 3 (Continued)
Pension Accounting & Financial Disclosure

SCHEDULE OF EMPLOYER CONTRIBUTIONS

Fiscal Year	Actuarial Required Contribution	Percentage of ARC Contributed	Annual Pension Cost (APC)	Actual Contribution	Percentage of APC Contributed	Net Pension Obligation
2004	527,899,270	94.4%	554,174,817	498,236,803	89.9%	-1,688,806
2005	555,169,630	105.6%	568,930,106	586,216,595	103.0%	-18,975,295
2006	555,342,400	103.1%	567,282,575	572,773,243	101.0%	-24,465,963
2007	578,895,501	106.5%	584,362,449	616,429,526	105.5%	-56,533,040
2008	637,097,695	116.2%	644,186,660	740,511,169	115.0%	-152,857,540
2009	697,190,561	106.4%	724,857,452	741,595,487	102.3%	-169,595,575
2010	904,382,657	83.5%	949,341,710	755,446,587	79.6%	24,299,548
2011	1,086,319,774	90.2%	1,101,899,846	980,393,924	89.0%	145,805,469
2012	1,127,265,199	100.0%	1,121,770,185	1,127,265,199	100.5%	140,310,456
2013	1,149,134,132	99.0%	1,133,723,118	1,137,733,532	100.4%	136,300,044

The percentage of ARC contributed provides a general indication of the funding progress for the liabilities of the . However, it should be noted that employers pay 100% of the required contribution based on a percentage of pay, which is determined following statutory requirements. The employer contribution rate is projected one year beyond the rate for which the ARC is determined. The resulting contribution variance between the ARC and the required employer rate can be either a credit or deficit. If it is a deficit, the deficit is amortized with level dollar payments over a five year period and paid through future employer contributions. If it is a surplus, the surplus is used to reduce and re-amortize the existing UAL schedules.

The Actuarial Required Contribution and the Annual Pension Cost are interest adjusted at the valuation rate to the end of the fiscal year. Calculations are in accordance with GASB's Statement No 27, paragraph 21. Amortization of the Net Pension Obligation is shown in Exhibit A-1.

DEVELOPMENT OF NET PENSION OBLIGATION:

(1) Actuarial Required Contribution	1,149,134,132
(2) Interest on Net Pension Obligation	11,575,614
(3) Amortization of Net Pension Obligation	26,986,626
(4) Annual Pension Cost (1)+(2)-(3)	1,133,723,120
(5) Employer Contribution	1,137,733,532
(6) Increase (decrease) in Net Pension Obligation	-4,010,412
(7) Net Pension Obligation Beginning of Year	140,310,456
(8) Net Pension Obligation End of Year (6)+(7)	136,300,044

EXHIBIT 3 (Continued)
Pension Accounting & Financial Disclosure

STATISTICAL DATA

COMPARATIVE SUMMARY OF REVENUES BY SOURCE
AND EXPENSES BY TYPE

Revenues by Source				
Fiscal Year	Members Contribution	Employer Contribution[1]	Investment Income	Total
2004	264,999,131	479,348,663	1,741,769,825	2,486,117,619
2005	270,619,181	564,922,509	1,138,249,695	1,973,791,385
2006	258,412,024	579,277,431 [2]	1,740,872,434	2,578,561,889
2007	282,326,101	593,819,853	2,622,473,864	3,498,619,818
2008	323,678,452	753,661,042 [3]	-793,655,054	283,684,440
2009	344,547,871	714,703,222	-3,287,852,517	-2,228,601,424
2010	347,114,632	726,567,699	1,289,304,693	2,362,987,024
2011	342,323,329	943,678,941	2,945,993,096	4,231,995,366
2012	333,908,454	1,084,637,731	-56,240,846	1,362,305,339
2013	327,767,936	1,095,482,766	1,754,983,691	3,178,234,393

Expenses by Type				
Fiscal Year	Benefits	Refunds	Administrative Expenses	Total
2004	1,075,298,667	26,714,645	11,385,025	1,113,398,337
2005	1,139,814,334	30,391,992	12,717,185	1,182,923,511
2006	1,204,472,977	38,556,907	13,831,845	1,256,861,729
2007	1,295,552,338	47,579,251	14,370,760	1,357,502,349
2008	1,383,381,577	34,285,358	18,498,003 [4]	1,436,164,938
2009	1,464,106,312	33,939,436	19,321,250	1,517,366,998
2010	1,532,526,141	40,210,177	19,100,619	1,591,836,937
2011	1,615,778,191	42,248,487	18,189,491	1,676,216,169
2012	1,682,528,254	49,139,028	18,864,917	1,750,532,199
2013	1,800,166,804	59,152,481	17,661,969	1,876,981,254

1 Includes Miscellaneous Contribution/Income in addition to direct employer contributions.
2 Includes $26,400,000 legislative appropriation from Act 642 of 2006.
3 Includes $40,000,000 legislative appropriation from Act 7 of 2008 (2nd Extraordinary Session).
4 Includes OPEB expense, beginning in 2008.

EXHIBIT 4

CENSUS DATA

GENERAL COMMENTS

TRSL provides the data for individual members of the system as of the valuation date. The validity of the results of any actuarial valuation is dependent upon the accuracy of the data base. Our review of submitted information is limited to validation of reasonableness and consistency in several areas, such as age, service, salary, and current benefits. In order to minimize coverage errors (i.e., missing or duplicated individual records) the records are checked for duplicates, and a comparison of the current year's records to those submitted in prior years is made. Records identified as containing suspicious data were assumed to possess the same characteristics of "good data" in the same cohort. Suspicious data are not necessarily errors, but data which fall outside the parameters of the editing process for further checking. The assigned values are based on information from similar records or based on historical averages for similarly situated members. Notwithstanding our efforts to review both census and financial data for apparent errors, we must rely upon the system's administrative staff and accountants to provide accurate information.

The data contained in this valuation is summarized on the following pages with exceptions noted below. The profile depicted in the cellular graphs represents "error-free data," which serves as the basis for determining costs and liabilities. Active members are allocated to cells based upon attained age and years of service. Retirees and survivors are allocated to cells based upon attained age and years elapsed since retirement or commencement of benefits.

The June 30, 2012 Terminated Vested status is overstated. It contains a number of retirement and DROP applications awaiting final certification.

Disability retirees who have reached normal retirement eligibility requirements are considered regular retirees by TRSL but are classified as disability retirees for purposes of the actuarial valuation. Liabilities are calculated accordingly.

Salary data contained in the profiles and valuation report exceed the sums reported by internal audit due to salary annualization. In the valuation process, membership data with fractional service in the first year of employment annualizes the salary.

The following is a summary by plan of the data submitted for valuation:

	2013		2012	
Active Members	**Census**	**Avg. Salary**	**Census**	**Avg. Salary**
Regular Teachers [1]	69,832	43,158	70,816	43,196
Higher Education [1]	8,807	58,669	8,980	58,671
Lunch Plan A	22	22,442	46	22,616
Lunch Plan B	1,187	18,534	1,220	18,906
Post DROP	3,062	56,613	3,451	57,615
Total	82,910	44,945	84,513	45,067

[1] Members employed by Lab Schools were reclassified as Regular Teachers for purposes of the actuarial valuation beginning in 2013. These members were previously included with Higher Education.

EXHIBIT 4 (Continued)
Census Data

Retired and Inactive Members	2013 Census	2012 Census
Regular Retirees[1]	60,714	57,619
Disability Retirees	4,049	3,993
Survivors	6,268	6,045
DROP Participants	2,451	2,637
Vested & Reciprocals	5,991	6,439
Inactive Non-Vested (Due Refunds)	18,355	18,069
Total Retired and Inactive	97,828	94,802
Total Members	180,738	179,315
Less Inactive Non-Vested (Due Refunds)	-18,355	-18,069
Total Active and Vested Inactive Members	162,383	161,246

MEMBER RECONCILIATION

	Active (Pre-DROP)	Active after DROP	Terminated Vested	In DROP	Retired, Disabled, Survivor	Total
June 30, 2012 Valuation	81,062	3,451	6,439	2,637	67,657	161,246
Adjustment for 2012 Pending Status [1]	(386)	(16)	(990)	691	695	(6)
June 30, 2012 Adjusted	80,676	3,435	5,449	3,328	68,352	161,240
Additions to Census						
Newly Hired Members	7,127		69			7,196
Change in Status						
New Regular Retirees	(2,049)	(930)	(183)	(723)	3,885	0
New Disability Retirees	(171)		(21)		192	0
New Survivors	(40)	(4)	(9)	(1)	54	0
Active to Terminated Vested	(1,509)		1,509			0
Active to DROP	(421)			421		0
Terminated Vested to Active	395		(395)			0
Disability to Active	1				(1)	0
Disability to Term Vested			2		(2)	0
DROP to Active After DROP		568		(568)		0
Eliminated from Census						
Refunded or Due Refund	(4,073)		(409)			(4,482)
Deceased	(30)	(9)	(20)	(5)	(1,466)	(1,530)
Data Revisions	(58)	2	(1)	(1)	17	(41)
June 30, 2013 Valuation	79,848	3,062	5,991	2,451	71,031	162,383

[1] June 30, 2013 census data included members pending retirement on June 30, 2013 with a retirement date prior to June 30, 2013. June 30, 2012 data did not include members pending retirement on June 30, 2012.

MEMBERSHIP PROFILE
CATEGORIZED BY AGE AND YEARS EMPLOYED

TRS RETIREMENT SYSTEM
ALL ACTIVE MEMBERS

CELLS DEPICT - MEMBER COUNT
TOTAL SALARY

VALUATION DATE 6/30/2013

Age/Years	(0-1)	[1-5)	[5-10)	[10-15)	[15-20)	[20-25)	[25-30)	[30-35)	[35-)	Total
[0 - 19)	1	0	0	0	0	0	0	0	0	1
	18318	0	0	0	0	0	0	0	0	18318
[20 - 24)	803	821	8	0	0	0	0	0	0	1632
	35086746	32585093	199177	0	0	0	0	0	0	67871016
[25 - 29)	1137	4327	1577	2	0	0	0	0	0	7043
	48832351	177332121	67566170	41326	0	0	0	0	0	293771968
[30 - 34)	898	3166	4831	1242	2	0	0	0	0	10139
	38024353	125198095	212602698	60086061	50041	0	0	0	0	435961248
[35 - 39)	698	2324	3370	3577	834	1	0	0	0	10804
	30087906	92518075	142746591	178244537	44168982	48299	0	0	0	487814390
[40 - 44)	562	2053	2898	2579	3172	850	2	0	0	12116
	22886034	79477422	114789280	121988817	168547710	47662881	70645	0	0	555422789
[45 - 49)	400	1630	2477	2077	1997	2294	851	2	0	11728
	16092730	62430895	91331931	85577304	95929486	126615282	48077704	82236	0	526137568
[50 - 54)	347	1179	1981	1935	2127	1788	1891	94	1	11343
	14230112	44044193	72560307	75632456	90884805	89100360	108184586	5760965	45038	500442822
[55 - 59)	227	899	1555	1568	1817	1781	360	175	54	8436
	9644295	34878674	59085288	63752889	76150391	83058606	19729790	12917849	4228498	363446280
[60 - 64)	119	492	935	667	841	990	282	152	70	4548
	5419384	21997392	37899247	29769748	37238531	48244231	16878132	11911857	5427932	214786455
[65 - 69)	27	155	284	222	246	250	208	103	55	1550
	1349983	6451177	12085198	10254762	11215340	12042769	12267722	8497255	5287090	79451296
[70 - 74)	8	55	87	66	54	61	65	58	54	508
	302898	2303605	3133278	2968177	2141543	3667371	4466366	4146839	4722974	27853051
Total	5227	17101	20003	13935	11090	8015	3659	584	234	79848
	221975110	679216742	813999165	628316077	526326829	410439799	209674945	43317001	19711532	3552977200

AVERAGES --- Attained Age 44.36
Service Years 10.85
Active Salary 44,497

MEMBERSHIP PROFILE
CATEGORIZED BY AGE AND YEARS EMPLOYED

TRS RETIREMENT SYSTEM
ACTIVE - REGULAR TEACHERS

CELLS DEPICT - MEMBER COUNT
TOTAL SALARY

VALUATION DATE 6/30/2013

Age/Years	(0-1)	[1-5)	[5-10)	[10-15)	[15-20)	[20-25)	[25-30)	[30-35)	[35-)	Total
[0 - 19)	1	0	0	0	0	0	0	0	0	1
	18318	0	0	0	0	0	0	0	0	18318
[20 - 24)	719	773	8	0	0	0	0	0	0	1500
	31841716	30991859	199177	0	0	0	0	0	0	63032752
[25 - 29)	893	3873	1507	1	0	0	0	0	0	6274
	37905982	159181202	64821246	18987	0	0	0	0	0	261927417
[30 - 34)	668	2600	4415	1203	2	0	0	0	0	8888
	26444563	99338723	193662073	58074254	50041	0	0	0	0	377569654
[35 - 39)	522	1874	2975	3408	819	1	0	0	0	9599
	19756179	69779919	121986571	169219018	43316313	48299	0	0	0	424106299
[40 - 44)	429	1656	2516	2369	3065	829	2	0	0	10866
	15556366	59038511	94812426	109334288	162294291	46438213	70645	0	0	487544740
[45 - 49)	306	1267	2120	1877	1857	2208	831	2	0	10468
	11339278	44108400	73963127	75906416	88264991	121377020	46910699	82236	0	461952167
[50 - 54)	245	889	1627	1700	1976	1665	1789	82	1	9974
	8861846	29818752	53845066	63557617	83836873	82275656	102053401	5269343	45038	429563592
[55 - 59)	164	628	1251	1374	1658	1636	269	123	48	7151
	6117471	19930490	42922904	53207726	69289828	74492851	14191355	8117522	3767462	292037609
[60 - 64)	77	328	739	550	744	897	199	88	42	3664
	2871485	11789762	26892176	22427266	31728266	42328220	10000901	5432425	2900954	156371455
[65 - 69)	14	103	208	166	211	211	168	49	14	1144
	518178	3593348	7662462	6256807	8924925	9661553	8226771	2635953	1018131	48498128
[70 - 74)	5	37	56	41	46	41	36	26	15	303
	170756	1047306	1516513	1533283	1690946	1920888	1580728	1112625	594159	11167204
Total	4043	14028	17422	12689	10378	7488	3294	370	120	69832
	161402136	528618272	682283741	559535662	489396474	378542700	183034500	22650104	8325744	3013789333

AVERAGES --- Attained Age 44.05
Service Years 11.15
Active Salary 43,158

MEMBERSHIP PROFILE
CATEGORIZED BY AGE AND YEARS EMPLOYED

TRS RETIREMENT SYSTEM
ACTIVE - HIGHER EDUCATION

CELLS DEPICT - MEMBER COUNT
TOTAL SALARY

VALUATION DATE 6/30/2013

Age/Years	(0-1)	[1-5)	[5-10)	[10-15)	[15-20)	[20-25)	[25-30)	[30-35)	[35-)	Total
[0 - 19)	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0
[20 - 24)	83	47	0	0	0	0	0	0	0	130
	3224024	1577299	0	0	0	0	0	0	0	4801323
[25 - 29)	242	445	69	1	0	0	0	0	0	757
	10893448	17996102	2728251	22339	0	0	0	0	0	31640140
[30 - 34)	218	547	402	38	0	0	0	0	0	1205
	11354167	25541625	18689020	1983127	0	0	0	0	0	57567939
[35 - 39)	165	421	369	164	14	0	0	0	0	1133
	10138868	22314588	20276155	8932326	837512	0	0	0	0	62499449
[40 - 44)	125	366	341	196	101	20	0	0	0	1149
	7194832	19913272	19223314	12393196	6114430	1207425	0	0	0	66046469
[45 - 49)	84	301	288	138	111	81	15	0	0	1018
	4585722	17314218	16105388	8476412	7018221	5128211	1038493	0	0	59666665
[50 - 54)	85	232	291	173	96	94	82	5	0	1058
	5075285	13313351	17639923	10940346	5924474	6179756	5658417	332824	0	65064376
[55 - 59)	55	220	240	160	99	116	55	49	6	1000
	3406411	14107683	15022514	9886795	5620539	7965221	4760889	4733635	461036	65964723
[60 - 64)	39	146	163	109	83	86	80	60	27	793
	2502307	9911892	10429878	7185902	5161731	5698323	6816380	6389752	2494299	56590464
[65 - 69)	11	45	65	52	35	38	40	52	39	377
	794361	2753406	4242209	3933721	2290415	2362010	4040951	5813046	4201118	30431237
[70 - 74)	3	14	28	25	8	20	28	29	32	187
	132142	1204469	1569300	1434894	450597	1746483	2868469	2987189	4027527	16421070
Total	1110	2784	2256	1056	547	455	300	195	104	8807
Total	59301565	145947905	125925952	65189058	33417919	30287429	25183599	20256446	11183980	516693853

AVERAGES --- Attained Age 45.85
Service Years 8.51
Active Salary 58,669

MEMBERSHIP PROFILE
CATEGORIZED BY AGE AND YEARS EMPLOYED

TRS RETIREMENT SYSTEM
LUNCH PLAN A

CELLS DEPICT - MEMBER COUNT
TOTAL SALARY

VALUATION DATE 6/30/2013

Age/Years	(0-1)	[1-5)	[5-10)	[10-15)	[15-20)	[20-25)	[25-30)	[30-35)	[35-)	Total
[0 - 19)	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0
[20 - 24)	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0
[25 - 29)	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0
[30 - 34)	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0
[35 - 39)	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0
[40 - 44)	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0
[45 - 49)	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0
[50 - 54)	0	0	0	0	0	0	2	3	0	5
	0	0	0	0	0	0	61622	72079	0	133701
[55 - 59)	0	0	0	0	0	0	1	2	0	3
	0	0	0	0	0	0	14498	46472	0	60970
[60 - 64)	0	0	0	0	0	1	0	2	1	4
	0	0	0	0	0	25937	0	54986	32679	113602
[65 - 69)	0	0	0	0	0	0	0	2	1	3
	0	0	0	0	0	0	0	48256	33691	81947
[70 - 74)	0	0	0	0	0	0	0	2	5	7
	0	0	0	0	0	0	0	36825	66683	103508
Total	0	0	0	0	0	1	3	11	7	22
Total	0	0	0	0	0	25937	76120	258618	133053	493728

AVERAGES --- Attained Age 63.38
Service Years 32.90
Active Salary 22,442

MEMBERSHIP PROFILE
CATEGORIZED BY AGE AND YEARS EMPLOYED

TRS RETIREMENT SYSTEM
LUNCH PLAN B

CELLS DEPICT - MEMBER COUNT
TOTAL SALARY

VALUATION DATE 6/30/2013

Age/Years	(0-1)	[1-5)	[5-10)	[10-15)	[15-20)	[20-25)	[25-30)	[30-35)	[35-)	Total
[0 - 19)	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0
[20 - 24)	1	1	0	0	0	0	0	0	0	2
	21007	15935	0	0	0	0	0	0	0	36942
[25 - 29)	2	9	1	0	0	0	0	0	0	12
	32921	154817	16673	0	0	0	0	0	0	204411
[30 - 34)	12	19	14	1	0	0	0	0	0	46
	225623	317747	251605	28680	0	0	0	0	0	823655
[35 - 39)	11	29	26	5	1	0	0	0	0	72
	192860	423568	483865	93193	15157	0	0	0	0	1208643
[40 - 44)	8	31	41	14	6	1	0	0	0	101
	134836	525639	753540	261333	138989	17243	0	0	0	1831580
[45 - 49)	10	62	69	62	29	5	5	0	0	242
	167730	1008277	1263416	1194476	646274	110051	128512	0	0	4518736
[50 - 54)	17	58	63	62	55	29	18	4	0	306
	292981	912090	1075318	1134493	1123458	644948	411146	86719	0	5681153
[55 - 59)	8	51	64	34	60	29	35	1	0	282
	120414	840501	1139870	658368	1240024	600534	763048	20220	0	5382979
[60 - 64)	3	18	33	8	14	6	3	2	0	87
	45593	295738	577193	156580	348534	191751	60851	34694	0	1710934
[65 - 69)	2	7	11	4	0	1	0	0	1	26
	37445	104423	180527	64234	0	19206	0	0	34150	439985
[70 - 74)	0	4	3	0	0	0	1	1	2	11
	0	51830	47465	0	0	0	17169	10200	34605	161269
Total	74	289	325	190	165	71	62	8	3	1187
Total	1271408	4650565	5789472	3591357	3512436	1583733	1380726	151833	68755	22000285

AVERAGES --- Attained Age 51.12
Service Years 10.07
Active Salary 18,534

MEMBERSHIP PROFILE
CATEGORIZED BY AGE AND YEARS EMPLOYED

TRS RETIREMENT SYSTEM
ACTIVE AFTER DROP

CELLS DEPICT - MEMBER COUNT
TOTAL SALARY
DROP BENEFITS

VALUATION DATE 6/30/2013

Age/Years	(0-1)	[1-2)	[2-3)	[3-4)	[4-5)	[5-10)	[10-15)	[15-20)	[20-)	Total
[0 - 34)	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0
[35 - 39)	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0
[40 - 44)	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0
[45 - 49)	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0
[50 - 54)	28	10	3	0	1	0	0	0	0	42
	1033646	351447	111211	0	20551	0	0	0	0	1516855
	981300	232104	69576	0	13104	0	0	0	0	1296084
[55 - 59)	323	279	160	129	81	35	0	0	0	1007
	13949804	17383772	10065891	8258524	5363897	2002046	0	0	0	57023934
	12246240	11158752	6300708	4812156	3023220	1098288	0	0	0	38639364
[60 - 64)	190	160	161	150	165	353	1	0	0	1180
	5980175	7617874	9560766	8778085	10437435	24545132	82626	0	0	67002093
	4360416	3545292	5347548	4731276	5503944	12440904	39012	0	0	35968392
[65 - 69)	9	15	80	78	54	273	83	2	0	594
	147311	691860	3365412	3010114	2700373	17046835	6949832	148861	0	34060598
	54300	138276	1219152	1165848	1084404	7156212	2865516	56352	0	13740060
[70 - 74)	2	7	4	6	5	93	84	38	0	239
	77329	210117	166254	266297	130297	4064363	5323585	3506829	0	13745071
	21240	36852	70008	43320	17772	1177440	1847196	1249152	0	4462980
Total	552	471	408	363	306	754	168	40	0	3062
Total	21188265	26255070	23269534	20313020	18652553	47658376	12356043	3655690	0	173348551
Total	17663496	15111276	13006992	10752600	9642444	21872844	4751724	1305504	0	94106880

AVERAGES --- Attained Age 62.49
Post Drop Years 4.02
Active Salary 56,613
Annual Benefit 30,734

MEMBERSHIP PROFILE
CATEGORIZED BY AGE AND YEARS RETIRED

TRS RETIREMENT SYSTEM
REGULAR RETIREES

CELLS DEPICT - MEMBER COUNT
TOTAL BENEFITS

VALUATION DATE 6/30/2013

Age/Years	(0-1)	[1-2)	[2-3)	[3-4)	[4-5)	[5-10)	[10-15)	[15-20)	[20-)	Total
[0 - 39)	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0
[40 - 44)	60	28	9	1	1	0	0	0	0	99
	994200	533280	200556	10968	7944	0	0	0	0	1746948
[45 - 49)	149	105	46	38	42	66	3	0	0	449
	2645424	2450496	971928	784500	823404	1041372	35880	0	0	8753004
[50 - 54)	388	173	95	77	73	368	121	1	0	1296
	8236524	4798872	2555364	1742064	1492128	6693648	1591224	8028	0	27117852
[55 - 59)	1179	911	587	565	380	926	573	168	6	5295
	34070520	33281148	20702328	20005152	12957828	22808364	8508144	2066076	39636	154439196
[60 - 64)	1369	1347	1152	1082	1010	4544	914	660	234	12312
	31056996	36078240	31559076	30425988	29003964	146507508	19885932	9423360	3035556	336976620
[65 - 69)	608	637	599	635	600	5585	3162	636	734	13196
	15124968	17543988	17207712	16859604	14934276	137984676	91117584	12373488	10740768	333887064
[70 - 74)	122	205	182	191	216	2396	3900	2015	1217	10444
	3263064	5688324	5457708	6204900	5989992	56977944	88729344	57538692	22174404	252024372
[75 - 79)	26	35	45	56	47	713	1761	2472	2571	7726
	741504	1198476	1332588	1829604	1823148	19801440	38724156	57007980	56340756	178799652
[80 - 84)	8	10	17	8	19	169	484	1256	3539	5510
	225660	605796	580536	124644	603096	5346996	11731824	29839272	68859396	117917220
[85 - 89)	1	1	2	6	2	29	82	256	2461	2840
	9108	36420	192480	132444	149424	851928	2267748	6389136	42573696	52602384
[90 - 99)	0	1	0	0	0	5	11	27	1503	1547
	0	4212	0	0	0	180708	296952	681012	23404128	24567012
Total	3910	3453	2734	2659	2390	14801	11011	7491	12265	60714
	96367968	102219252	80760276	78119868	67785204	398194584	262888788	175327044	227168340	1488831324

AVERAGES --- Attained Age 70.15
Years Retired 12.01
Annual Benefit 24,522

REGULAR RETIREES

MEMBERSHIP PROFILE
CATEGORIZED BY AGE AND YEARS RETIRED

TRS RETIREMENT SYSTEM
DISABILITY RETIREES

CELLS DEPICT - MEMBER COUNT
TOTAL BENEFITS

VALUATION DATE 6/30/2013

Age/Years	(0-1)	[1-2)	[2-3)	[3-4)	[4-5)	[5-10)	[10-15)	[15-20)	[20-)	Total
[0 - 39)	7	9	7	5	5	8	0	0	0	41
	126108	128832	99840	81300	63132	94140	0	0	0	593352
[40 - 44)	9	11	14	5	3	23	7	1	0	73
	172500	205560	306336	67968	50616	279024	74064	9252	0	1165320
[45 - 49)	28	22	18	14	15	55	21	7	1	181
	501444	522108	353520	216900	208812	714708	215280	66072	8748	2807592
[50 - 54)	48	40	27	24	20	85	65	22	18	349
	751044	622200	500352	342648	261792	1048848	676428	198852	215940	4618104
[55 - 59)	35	36	43	33	35	170	133	62	53	600
	613008	492720	621516	524268	415044	2075220	1529292	603780	500904	7375752
[60 - 64)	19	21	35	36	30	251	162	121	129	804
	258420	301548	460680	585864	415332	2954172	1731312	1414332	1541388	9663048
[65 - 69)	3	6	9	14	9	170	224	125	209	769
	34548	102204	136752	195144	115656	1952316	2177172	1156788	2407596	8278176
[70 - 74)	2	1	4	0	0	23	138	156	249	573
	20628	10836	64488	0	0	290988	1328988	1375404	2619492	5710824
[75 - 79)	0	0	1	0	0	9	22	66	259	357
	0	0	12648	0	0	73764	191052	578460	2648448	3504372
[80 - 84)	0	0	0	0	0	4	1	8	172	185
	0	0	0	0	0	31548	3564	60192	1737264	1832568
[85 - 89)	0	0	0	0	0	0	1	2	79	82
	0	0	0	0	0	0	8568	38280	847788	894636
[90 - 99)	0	0	0	0	0	0	0	0	35	35
	0	0	0	0	0	0	0	0	363012	363012
Total	151	146	158	131	117	798	774	570	1204	4049
Total	2477700	2386008	2556132	2014092	1530384	9514728	7935720	5501412	12890580	46806756

AVERAGES --- Attained Age 64.97
Years Retired 14.48
Annual Benefit 11,560

MEMBERSHIP PROFILE
CATEGORIZED BY AGE AND YEARS RETIRED

TRS RETIREMENT SYSTEM
SURVIVOR BENEFITS

CELLS DEPICT - MEMBER COUNT
TOTAL BENEFITS

VALUATION DATE 6/30/2013

Age/Years	(0-1)	[1-2)	[2-3)	[3-4)	[4-5)	[5-10)	[10-15)	[15-20)	[20-)	Total
[0 - 39)	45	35	36	38	40	112	38	19	2	365
	492864	371964	302124	369552	370128	978828	301032	152868	7776	3347136
[40 - 44)	9	12	10	9	6	40	21	14	5	126
	127764	205512	113628	110544	86352	507360	225876	157824	38460	1573320
[45 - 49)	11	11	11	13	8	48	37	17	12	168
	302868	158208	139440	195420	61236	445116	514320	191784	156876	2165268
[50 - 54)	13	20	21	14	20	66	54	22	15	245
	203736	338112	219348	262260	166164	843804	650148	337428	185544	3206544
[55 - 59)	28	35	28	37	32	106	57	47	27	397
	529728	648420	532224	487128	409572	1890384	686292	550788	270288	6004824
[60 - 64)	37	44	48	45	39	132	103	60	73	581
	943344	1090992	1154832	1070700	845760	2728704	1795632	860376	861240	11351580
[65 - 69)	53	58	59	43	42	213	148	94	97	807
	1050336	1233132	1260336	958068	963768	4558152	2999952	1534464	1212948	15771156
[70 - 74)	58	59	62	46	46	217	154	110	157	909
	1376244	1415028	1627788	755532	1007220	4614720	3285168	2048568	2504688	18634956
[75 - 79)	47	74	61	43	57	263	178	113	207	1043
	868872	1579548	1184196	1034388	1244172	5115924	3582708	2015400	3310404	19935612
[80 - 84)	44	55	41	47	47	163	140	102	176	815
	986724	966324	608652	720564	836760	3232284	2509836	1934688	2774016	14569848
[85 - 89)	27	29	28	25	25	102	89	67	140	532
	393504	441120	503244	371376	390672	1495056	1309068	998796	2199420	8102256
[90 - 99)	9	5	6	12	5	56	48	40	99	280
	124548	94980	79344	205584	74796	798588	680772	491592	1386900	3937104
Total	381	437	411	372	367	1518	1067	705	1010	6268
Total	7400532	8543340	7725156	6541116	6456600	27208920	18540804	11274576	14908560	108599604

AVERAGES --- Attained Age 69.37
Years Retired 10.94
Annual Benefit 17,326

MEMBERSHIP PROFILE
CATEGORIZED BY AGE AND YEARS RETIRED

TRS RETIREMENT SYSTEM
DROP PARTICIPANTS

CELLS DEPICT - MEMBER COUNT
TOTAL BENEFITS

VALUATION DATE 6/30/2013

Age/Years	(0-1)	[1-2)	[2-3)	[3-4)	[4-5)	[5-10)	[10-15)	[15-20)	[20-)	Total
[0 - 39)	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0
[40 - 44)	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0
[45 - 49)	2	0	0	0	0	0	0	0	0	2
	37092	0	0	0	0	0	0	0	0	37092
[50 - 54)	127	246	159	9	0	0	0	0	0	541
	5455284	10425228	6543192	370968	0	0	0	0	0	22794672
[55 - 59)	264	478	519	26	0	0	0	0	0	1287
	9089460	17193024	19618320	1216356	0	0	0	0	0	47117160
[60 - 64)	137	242	205	13	0	0	0	0	0	597
	2490300	4733628	4272084	424164	0	0	0	0	0	11920176
[65 - 69)	3	6	10	0	0	0	0	0	0	19
	10068	33012	60588	0	0	0	0	0	0	103668
[70 - 74)	0	2	2	0	0	0	0	0	0	4
	0	13500	6360	0	0	0	0	0	0	19860
[75 - 79)	0	1	0	0	0	0	0	0	0	1
	0	10320	0	0	0	0	0	0	0	10320
[80 - 84)	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0
[85 - 89)	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0
[90 - 99)	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0
Total	533	975	895	48	0	0	0	0	0	2451
Total	17082204	32408712	30500544	2011488	0	0	0	0	0	82002948

AVERAGES --- Attained Age 57.46
Years Retired 1.60
Annual Benefit 33,457

MEMBERSHIP PROFILE
CATEGORIZED BY AGE AND YEARS EMPLOYED

TRS RETIREMENT SYSTEM
TERM-VESTED/RECIPROCAL

CELLS DEPICT - MEMBER COUNT
TOTAL BENEFITS

VALUATION DATE 6/30/2013

Age/Years	(0-1)	[1-5)	[5-10)	[10-15)	[15-20)	[20-25)	[25-30)	[30-35)	[35-)	Total
[0 - 19)	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0
[20 - 24)	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0
[25 - 29)	0	0	71	0	0	0	0	0	0	71
	0	0	396193	0	0	0	0	0	0	396193
[30 - 34)	0	0	499	28	0	0	0	0	0	527
	0	0	3513242	336817	0	0	0	0	0	3850059
[35 - 39)	0	2	612	175	4	0	0	0	0	793
	0	5916	4188267	2274677	62832	0	0	0	0	6531692
[40 - 44)	1	7	660	284	58	2	0	0	0	1012
	537	24462	3945739	3120067	948634	44301	0	0	0	8083740
[45 - 49)	0	5	542	282	113	17	2	0	0	961
	0	10453	3090404	2876800	1809089	410727	79044	0	0	8276517
[50 - 54)	0	5	527	359	166	43	16	0	0	1116
	0	17941	2948702	3267965	2397959	934122	500323	0	0	10067012
[55 - 59)	1	2	455	399	170	31	10	1	0	1069
	102	1251	2689947	3698429	2400421	669238	261383	20023	0	9740794
[60 - 64)	1	6	150	84	34	19	6	2	0	302
	388	7906	836323	688375	491522	554500	123805	70040	0	2772859
[65 - 69)	0	2	31	26	13	3	2	1	1	79
	0	6445	134039	209417	220207	83333	75633	20151	152251	901476
[70 - 74)	0	0	21	14	11	8	3	3	1	61
	0	0	149564	60565	108314	213469	81518	66313	47145	726888
Total	3	29	3568	1651	569	123	39	7	2	5991
Total	1027	74374	21892420	16533112	8438978	2909690	1121706	176527	199396	51347230

AVERAGES --- Attained Age 47.83
Service Years 9.83
Annual Benefit 8,571

EXHIBIT 5

SUMMARY OF PLAN PROVISIONS

EFFECTIVE DATE:

August 1, 1936

EMPLOYER:

The State of , the parish school board, the city school board, the State Board of Education, the State Board of Supervisors, University or any other agency of and within the State by which a teacher is paid.

ELIGIBILITY FOR PARTICIPATION:

Condition of employment for all teachers

CREDITABLE SERVICE:

Service as a teacher while member of the system.

ADDITIONAL SERVICE:

1. Credit for service canceled by withdrawal of accumulated contributions may be restored by member by paying the amount withdrawn plus interest.

2. Service rendered in public school system of another state may be purchased at the actuarial cost of the additional retirement benefit, or at the member's option receive service credit based on the funds actually transferred.

3. Credit for service in non-public or parochial schools may be purchased at the actuarial cost of the additional retirement benefit, or at the member's option receive service credit based on the funds actually transferred.

4. Maximum of 4 years of credit for military service may be obtained for each member, contingent on payment of actuarial cost.

5. Credit for legislative service of former teacher, now legislator, may be purchased at the actuarial cost.

6. Conversion of Sick Leave to Membership Service: At retirement, or at death before retirement of member with surviving spouse or dependent or both who are entitled to benefits, unused accumulated sick leave will be added to membership service. Conversion of unused sick and annual leave cannot be used to obtain retirement eligibility. Leave accumulated after January 30, 1990, can be converted to a maximum one year service credit. Leave is converted on the following basis:

EXHIBIT 5 (Continued)
Plan Provisions

Leave Earned Prior to 6/30/88	
Accumulated Sick Days	Fraction of Year Credit
25-45	0.25 year
46-90	0.50 year
91-135	0.75 year
136-180	1.00 year
181-225	1.25 years
226-270	1.50 years
271-315	1.75 years
316-360	2.00 years

Leave Earned After 6/29/88				
Accumulated Sick Days (by Member Classification)				Fraction of Year
9 Month	10 Month	11 Month	12 Month	Credit
10-18	11-20	12-22	13-24	0.1
19-36	21-40	23-44	25-48	0.2
37-54	41-60	45-66	49-72	0.3
55-72	61-80	67-88	73-96	0.4
73-90	81-100	89-110	97-120	0.5
91-108	101-120	111-132	121-144	0.6
109-126	121-140	133-14	145-168	0.7
127-144	141-160	155-176	169-192	0.8
145-162	161-180	177-198	193-216	0.9
163-180	181-200	199-220	217-240	1.0

EARNABLE COMPENSATION:

The compensation earned by a member for qualifying service.

FINAL AVERAGE COMPENSATION

For members whose first employment makes them eligible for membership in a state retirement system on or after January 1, 2011, the average annual earnable compensation is the highest 60 successive months of employment. The average compensation for purposes of computing benefits cannot increase more than 15% per year.

For all other members, the average annual earnable compensation is the highest 36 successive months of employment; the average compensation for purposes of computing benefits cannot increase more than 10% per year.

Per R.S.11:892, if the maximum benefit accrual (100%) is reached, employee contributions are discontinued, average final compensation is not limited to the years for which employee contributions were made. Compensation is limited by the Internal Revenue Code Section 401a(17) compensation limit.

EXHIBIT 5 (Continued)
Plan Provisions

Includes workmen's compensation, and PIP's program in accordance with the following:

Years of Participation	% of Earnings to be Included
3	60%
4	80%
5	100%

However, if member completed at least two years and subsequently becomes disabled, he shall receive 40% of such earnings. If he has completed one year and becomes disabled, he shall receive 20% of such earnings.

ACCUMULATED CONTRIBUTIONS:

Sum of all amounts deducted from compensation of members.

EMPLOYEE CONTRIBUTIONS:

8% of earnable compensation. Prior to July 1, 1989, 7% of earnable compensation.

EMPLOYER CONTRIBUTIONS:

Determined in accordance with Act 81 of the 1988 Legislative Session based on the Public Retirement Systems' Actuarial Committee's recommendation to the Legislature.

NORMAL RETIREMENT BENEFIT:

Eligibility and Benefit:

After submitting written application to the Board, members are eligible for the following:

1. Members whose first employment makes them eligible for membership in a state retirement system on or after January 1, 2011 may retire with a 2.5% accrual rate after attaining age 60 with at least 5 years of service credit. Members are eligible for an actuarially reduced benefit with 20 years of service at any age.

2. For all other members:

   If hired on or after July 1, 1999, members are eligible for a 2.5% accrual rate at the earliest of age 60 with five years of service, age 55 with 25 years of service, or at any age with 30 years of service. Members may retire with an actuarially reduced benefit with 20 years of service at any age.

EXHIBIT 5 (Continued)
Plan Provisions

If hired before July 1, 1999, members are eligible for a 2% accrual rate at the earliest of age 60 with five years of service, or at any age with 20 years of service and are eligible for a 2.5% accrual rate at the earliest of age 65 with 20 years of service, age 55 with 25 years of service, or at any age with 30 years of service.

Benefit:

Annuity which shall be the actuarial equivalent of accumulated employee contributions at retirement date, and Annual pension, which, together with annuity, provides total allowance equal to the applicable accrual rate times final average compensation times years of creditable service (including unused sick leave). Members hired before June 30, 1986 receive an additional $300 annual supplemental benefit (Act 608 of 1986).

A. Annual benefit may not exceed 100% of average earnable compensation.

B. Legislator's benefit is calculated based on either Teacher's or Legislator's salary but not both – for new legislators (their option to choose); employee contribution to be 12% of either salary and expense allowance as legislator, not both.

C. For Members employed on or after July 1, 1999, the annual pension cannot exceed the maximum benefit provided under Section 415(b) of the Internal Revenue Service Code and related Federal Regulations as adjusted for inflation and form of benefit other than life annuity or qualified joint and survivor annuity for retirement ages as follows:

Age	Maximum	Age	Maximum	Age	Maximum
48	$ 57,561	56	$ 116,851	64	205,000
49	62,755	57	128,059	65	205,000
50	68,455	58	140,456	66	205,000
51	74,715	59	154,182	67	205,000
52	81,593	60	169,395	68	205,000
53	89,163	61	186,271	69	205,000
54	97,502	62	205,000	70	205,000
55	106,700	63	205,000		

POST RETIREMENT INCREASES:

Permanent benefit increases, previously referred to as cost of living adjustments, may be granted, with legislative approval, provided there are sufficient funds in the Experience Account to fully fund the increase on an actuarial basis. Beginning July 1, 2009, the Experience Account is credited with fifty percent of excess investment income above $200,000,000. Excess investment income is investment income in excess of the actuarial valuation rate of 8.25% (8.00% beginning July 1, 2013). Balances in the experience account accrue interest at the average actuarial yield for the System portfolio. The Employee Experience Account balance is limited to the funds necessary to fund two such increases. The Experience Account is debited for the increase in actuarial accrued liability resulting from the increases.

EXHIBIT 5 (Continued)
Plan Provisions

If the actuarial rate of return for the prior plan year is at least 8.25%, regardless of the actuarial valuation rate, the benefit increase is limited to the lesser of 3% or the increase in the CPI-U for the calendar year immediately preceding the increase. If the actuarial rate of return for the prior plan year is less than 8.25%, regardless of the actuarial valuation rate, the increase is limited to the lesser of 2% or the increase in the CPI-U for the calendar year immediately preceding the increase, provided the System is at least 80% funded. If the actuarial rate of return for the prior plan year is less than the actuarial valuation rate and the System is not at least 80% funded, no increase can be granted.

Benefits are restricted to those retirees who have attained the age of 60 and have been retired for at least one year. The minimum age 60 for the receipt of a benefit increase does not apply to disability retirees. The increase shall be based on the first seventy thousand dollars of the retiree's annual benefit, indexed annually for years after 2001.

DISABILITY RETIREMENT:

Eligibility:

Members whose first employment makes them eligible for membership in a state retirement system on or after January 1, 2011 are eligible with 10 years of service credit. All other members are eligible with 5 years of service; certification of disability by medical board (medical examination required once in every year for the first 5 years of disability retirement, and once in every 3 years thereafter, until age 60).

Benefit: Act 572 of 1995

1. If ineligible for service retirement at disability, disability pension will be 2.5% of average compensation multiplied by years of service. Benefit is limited to 50% of average compensation, but will not be less than the lesser of 40% of the state minimum salary for a beginning teacher with a bachelor's degree or 75% of average compensation.

2. Additional 50% of member's benefit payable if minor child is present, but total amount to family limited to 75% of final average compensation.

3. Member will become a regular retiree upon attainment of the earliest age for retirement eligibility as if the member continued in service, without further change in compensation. Benefit is based on years of creditable service but not less than the disability benefit. Benefit for minor children continue as long as the retiree has a minor child.

4. Upon death of a disability retiree, surviving spouse, married to retiree at least two years prior to death of the disability retiree, shall receive 75% of disability benefit. Upon death of an unmarried retiree with minor children, the benefit shall equal 50% of disability benefit.

5. Upon recovery of disability as determined by the board of trustees, upon advice of the medical board, and returns to active membership for at least three years starting no later than one year after recovery, then he shall be credited with one year of service for each year disabled for purposes of establishing benefit eligibility, but not for computation of benefits.

EXHIBIT 5 (Continued)
Plan Provisions

SURVIVOR'S BENEFITS (Effective July 13, 1978):

Eligibility and Benefit:

1. Surviving Spouse with minor children of an active member with 5 years of creditable service with at least 2 years earned immediately prior to death; or a member with 20 years of creditable service regardless of when earned or whether in active service at time of death will receive:

   The greater of:

   A.) $600 per month, or

   B.) 50% of benefit that would have been payable upon service retirement at age 60 had member continued in service to age 60 without change in compensation. 50% of spouse's benefit payable for each minor child (not greater than two), with total benefit to family at least equal to the Option 2, accrued Benefit based on actual service credit. Benefits to spouse cease upon remarriage, but resumes upon subsequent divorce or death of new spouse; however, if the member was eligible to retire or had reached age 55 on the date of his death, benefits shall not cease upon remarriage. When minor children are no longer present, spouse's benefit reverts to benefit in B, for eligible spouse.

2. Surviving Spouse without minor children of either an active member with 10 years of creditable service with at least 2 years earned immediately prior to death, or a member with 20 years of creditable service regardless of when earned or whether in active service at time of death will receive:

   The greater of:

   A.) $600 per month, or

   B.) Option 2 equivalent of accrued benefit based on actual service. Spouse's benefit payable for life. Benefits to spouse cease upon remarriage, but resumes upon subsequent divorce or death of new spouse; however, if the member was eligible to retire on the date of his death, benefits shall not cease upon remarriage.

3. Beneficiary not eligible for 1 or 2 will receive return of member's accumulated contributions.

REFUND OF CONTRIBUTIONS:

Death prior to retirement - accumulated contributions credited to individual account in annuity savings fund are returnable to designated beneficiary, if any; otherwise, to his estate.

TERMINATION WITH VESTED SERVICE:

Any member with credit for 5 years of service who withdraws from service may elect to leave accumulated contributions in system until age 60, when he may apply for retirement and begin receiving a retirement benefit based on the credits he had at date of withdrawal.

EXHIBIT 5 (Continued)
Plan Provisions

OPTIONAL FORMS OF BENEFIT:

In lieu of receiving normal retirement benefit, member may elect to receive actuarial equivalent of retirement allowance in a reduced form as follows:

Option l - If a member dies before receiving present value of annuity in monthly payments, balance paid to designated beneficiary.
Option 2 - Reduced retirement allowance, if member dies, to be continued to designated beneficiary for his lifetime.
Option 3 -One-half of reduced retirement allowance, if member dies, to be continued to designated beneficiary for his lifetime.
Option 4 - Other benefits of equal actuarial value may be elected with approval of board.

Options 2A, 3A, 4A - Same as Options 2, 3, and 4, except that reduced benefit reverts back to maximum if beneficiary predeceases retiree.

Automatic COLA Option – Members may choose an irrevocable election at retirement to receive an actuarially reduced benefit which increases 2.5% annually. The increase begins on the first retirement anniversary date, but not before the retiree attains age 55 or would have attained age 55 in the case of a surviving spouse. This option can be chosen in combination with the above options. . (Per Act 270 of 2009, effective July 1, 2009)

Initial Lump Sum Benefit Option - Members who did not participate in DROP may elect an actuarially reduced pension and receive a lump-sum equal to not more than 36 months of the maximum monthly pension.

DEFERRED RETIREMENT OPTION PLAN:

Instead of terminating employees and accepting a service retirement allowance, any member who has met the eligibility requirements may elect to participate in the Deferred Retirement Option Plan (DROP) and defer receipt of benefits.

Normal Eligibility:

Any member who is eligible to receive a 2.5% service retirement allowance, or who has 10 years of service credit, exclusive of military service, at age 60 may begin participation on the first retirement eligibility date for a period not to exceed the third anniversary of retirement eligibility.

Benefit:

Upon termination of employment, a participant will receive, at his option:

(1) lump sum payment (equal to the payments to the account);
(2) a true annuity based upon his account; or
(3) other methods of payment approved by the board of trustees.

EXHIBIT 5 (Continued)
Plan Provisions

If a participant dies during the period of participation in the program, his account balance shall be paid to the beneficiary, or if none, to his estate in any form approved by the Board of Trustees.

If employment is not terminated at the end of DROP participation, payments into the account ceases and account earns interest. The participant resumes active contributing membership and earns an additional retirement benefit based on additional service rendered. The method of computation of the additional benefit is subject to the following:

(1) If additional service was less than the period used to determine Final Average Compensation, average compensation figure to calculate the additional benefit will be the same as used to calculate initial benefit.

(2) If additional service was earned for a period greater the number of months used to determine Final Average Compensation, the average compensation figure used to calculate the additional benefit will be based on compensation during the period of additional service.

DROP Accounts established prior to January 1, 2004, earn interest following termination of DROP at a rate 0.5% below the actuarial rate of the System's investment portfolio.

DROP accounts established on or after January 1, 2004 are credited with Money Market rates.

Exhibit 5 (Continued)
Plan Provisions

DESCRIPTION OF BENEFITS FOR MERGED LSU EMPLOYEES

GENERAL:

Eligibility for benefits based on the eligibility requirements of the Teachers' plan, except for deaths and disabilities before 1984. All service, funded and non-funded, is used in determining eligibility.

Final Average Salary was the average of the three highest years, except for academic year employees who retired within three years after January 1, 1979. For this group, any salary used in the Final Average Salary calculation, which was earned before January 1, 1979, was increased by 2/9ths.

The Social Security breakpoint average, for service under the funded LSU plan, was frozen at the December 31, 1978, level. That is, the breakpoint average for funded service was calculated as of December 31, 1978, and kept constant. This produced the following breakpoint averages:

Social Security Breakpoint Average
(for LSU funded service)

Calendar Year of Entry	Breakpoint Average
1971 or before	13,400
1972	13,800
1973	14,600
1974	15,360
1975	15,900
1976	16,500
1977	17,100
1978	17,700

RETIREMENT BENEFITS:

Retirement benefits calculated using LSU funded service with the LSU formula and service after December 31, 1978, with the Teacher's formula. Thus, the "funded" benefit is (1) 1.33% of final average salary under the Social Security breakpoint average plus 2.5% of final average salary over the Social Security breakpoint average, times years of "funded" service with LSU before December 31, 1978, plus (2) 2.5% (or 2% if total service less than 20 years) times final average salary times years since January 1, 1979, plus $300.

SURVIVOR'S BENEFITS:

For deaths after 1983, the provisions of the Teachers' plan apply. However, the benefit is calculated using all service, funded and non-funded, then prorated by service between the funded and non-funded portions. Children's benefits are also prorated into the funded and non-funded portions.

DISABILITY BENEFITS:

For disabilities after 1983, the provisions of the Teachers' plan apply. However, the benefit is calculated using all service, then prorating by service between the funded and non-funded portions. Children's benefits are also prorated.

Exhibit 5 (Continued)
Plan Provisions

VESTING BENEFITS:

Benefits for terminated vested members was determined as outlined under "Retirement Benefits."

REFUND OF CONTRIBUTIONS:

Terminated members are allowed a refund of accumulated contributions as described by the Teachers' plan.

COOPERATIVE EXTENSION PERSONNEL:

The LSU employees are eligible for the supplemental benefit described in Section 700.2 of Act 643 of 1978. The benefit is equal to 1% for the first five years of service, 3/4% for the next five years, and 1/2% thereafter. The funded benefit is the benefit based on service after September 12, 1975.

OPTIONAL FORMS OF BENEFITS:

Retiring members may elect options as described by the Teachers' plan.

DEFERRED RETIREMENT OPTION PLAN:

Eligible members may participate under same requirements as described by the Teachers' plan.

EXHIBIT 5 (Continued)
Plan Provisions

DESCRIPTION OF BENEFITS FOR MERGED SCHOOL LUNCH EMPLOYEES

EFFECTIVE DATE:

The School Lunch Employees' Retirement System was originally established on January 1, 1953.

On July 1, 1980, the School Lunch Employees' Retirement System was restructured. All individuals who become employed after July 1, 1980, shall become members of Plan A or Plan B as determined by the agreement in effect for each employer.

Plan A: Parishes which had withdrawn from Social Security coverage became known as Plan A parishes. Those participating in both the regular and the supplemental plan or only in the supplemental plan shall become members of Plan A.

Plan B: Parishes which had not withdrawn from Social Security coverage became known as Plan B parishes. Those participating only in the regular plan shall become members of Plan B.

Effective July 1, 1983 Plan A and Plan B were merged into TRSL.

CREDITABLE SERVICE: Service as an employee while member of the system.

MILITARY SERVICE: Maximum of 4 years of credit may be purchased.

ADDITIONAL CREDITABLE SERVICE:

Credit for service canceled by withdrawal of accumulated contributions may be restored by paying into system the amount withdrawn plus regular interest.

EMPLOYEE CONTRIBUTIONS:

Plan A: 9.10% of monthly earnings
Plan B: 5% of monthly earnings

EMPLOYER CONTRIBUTIONS:

Plan A and Plan B: Actuarial Required Amount (Effective July 1, 1989)

EXHIBIT 5 (Continued)
Plan Provisions

SCHOOL LUNCH PLAN A

RETIREMENT BENEFIT:

Members hired after June 30, 1983 earn Regular Teachers Benefits. Benefits description below applies to members hired prior to July 1, 1983.

NORMAL RETIREMENT:

Eligibility:

1. Age 60 and 5 years of creditable service.
2. Age 55 and 25 years of creditable service.
3. 30 years of creditable service, regardless of age.

Benefit:

3% of average final compensation times years of creditable service.

Members of only the supplemental plan prior to July 1, 1980 who were age 60 or older at the time the member's employer terminated its agreement with the Department of Health, Education and Welfare, and who became a member of the retirement system because of this termination earned 1% of average final compensation plus $2 per month for each year of service credited prior to July 1, 1980, plus 3% of average final compensation for each year of service credited after July 1, 1980.

*****These members are eligible to retire upon reaching age 70, with less than 10 years of creditable service.

Members hired before June 30, 1986 receive an additional $300 annual supplemental benefit.

Benefits are limited to 100% of average final compensation.

DISABILITY RETIREMENT:

Eligibility:

Five years of creditable service; certification of disability by the State Medical Disability Board.

Benefit:

Normal retirement allowance if eligible; otherwise, an amount equal to the normal retirement allowance to which the member would have been entitled had he met eligibility requirements; provided the amount is subject to a minimum of 60% and a maximum of 100% of average final compensation, in the event no optional selection is chosen.

EXHIBIT 5 (Continued)
Plan Provisions

SURVIVOR'S BENEFITS:

Eligibility:

1. Surviving spouse with minor children of a member with 5 years of service credit with at least 2 years earned immediately prior to death, or 20 years of service credit regardless of when earned or whether the deceased member was in active service at the time of death.

2. Surviving spouse with no minor children of member with 10 or more years of service credit with at least 2 years earned immediately prior to death, or 20 years of service credit regardless of when earned or whether the deceased member was in active service at the time of death.

3. Beneficiary not eligible for 1 or 2.

Benefit:

1. Greater of:

   A. $600 per month, or

   B. 50% of benefit that would have been payable upon retirement at age 60 had member continued in service to age 60 without change in compensation. 50% of spouse's benefit payable for each minor child (maximum two children), with total benefit to family at least equal to the Option 2 benefit. Accrued Benefit based on actual service credit. Benefits to spouse cease upon remarriage, but will resume upon subsequent death or divorce. When minor children are no longer present, spouse's benefit reverts to benefit in (2), if spouse is eligible for such benefit.

2. Greater of:

   A. $600 per month, or

   B. Option 2 equivalent of accrued benefit based on actual service. Surviving spouse must have been married to the deceased member at least one year prior to death. If the member had not been eligible for retirement upon date of death, benefits to spouse cease upon remarriage, but resume upon subsequent death or divorce of new spouse.

3. Return of member's accumulated contributions.

EXHIBIT 5 (Continued)
Plan Provisions

SCHOOL LUNCH PLAN B

NORMAL RETIREMENT:

Eligibility:

1. Age 60 and 5 years of creditable service.

2. Age 55 and 30 years of creditable service.

Benefit:

Annual pension which provides total allowance equal to 2% of average final compensation times years of creditable service. Members hired before June 30, 1986 receive an additional $300 annual supplemental benefit.

NOTE:
Benefit reduced by 3% for each year under age 62, unless member has 25 years of creditable service.

DISABILITY RETIREMENT:

Eligibility:

Five years of creditable service; certification of disability by the State Medical Disability Board.

Benefit:

Normal retirement allowance if eligible therefore; otherwise 2% of average final compensation times years of creditable service; provided amount not less than 30%, nor more than 75% of average final compensation, in the event no optional selection is made.

SURVIVOR'S BENEFITS:

Eligibility: Twenty or more years of creditable service.

Benefit: Option 2 benefit.

EXHIBIT 5 (Continued)
Plan Provisions

SCHOOL LUNCH PLAN A and PLAN B

OPTIONAL FORMS OF BENEFIT:

Retiring members may elect options as described by the Teachers' plan.

RETURN OF CONTRIBUTIONS:

Should a member not eligible to retire cease to be an employee, he shall be paid the amount of his accumulated contributions upon demand. Should a members death occur prior to retirement with no survivors eligible for benefits, his accumulated contributions are returnable to a designated beneficiary, if any; otherwise, to his estate.

TERMINATION WITH VESTED SERVICE:

Any member with credit for 5 years of service who withdraws from service may elect to leave accumulated contributions in system until his earliest normal retirement date, when he may apply for retirement and begin receiving a retirement benefit based on average final compensation and creditable service at date of withdrawal.

DEFERRED RETIREMENT OPTION PLAN:

Retiring members may elect options as described by the Teachers' plan.

EXHIBIT 6

ACTUARIAL COST METHODS AND ASSUMPTIONS

COST METHOD:

The "Projected Unit Credit" cost method was used to calculate the funding requirements of the retirement system, as required by Statutes, R. S. 11:22. Under this cost method, the actuarial present value of projected benefits of each individual included in the valuation is accumulated from the participant's attained age to the anticipated retirement date(s). That portion of the actuarial present value attributable to the current year's projected benefit accruals is called the normal cost. The actuarial present value of future projected benefits in proportion to service accrued on the date of valuation is called the actuarial accrued liability.

ASSET VALUATION:

For the Plan Year Ending June 30, 1999 through June 30, 2012, the computation of the Actuarial Value of Assets is the market value of assets adjusted for a four year weighted average of the unrealized gain or loss in the value of all assets, subject to Corridor Limits of 80% to 120% of the Market Value of Assets.

Beginning June 30, 2013, the market value of assets is adjusted to gradually recognize investment gains and losses relative to the net assumed investment return, over a 5 year period in 20% increments. The adjusted asset value is subject to Corridor Limits of 80% to 120% of the Market Value of Assets.

ACCOUNTING DISCLOSURE:

The Governmental Accounting Standards Board Statement No. 25 requires the disclosure of "Credited Projected Benefits" for Public Employee Retirement Systems. The disclosures illustrated in Exhibit 3 were developed using the Projected Unit Credit cost method. The statement of assets provided by the audit staff was the final draft prior to publication. Should the statement of assets received differ from the final audit report, a revised actuarial statement will be issued, but only to the extent that any difference in reporting affects the employer's contribution rate or the yield to the Actuarial Value of Assets.

ACTUARIAL ASSUMPTIONS:

Assumptions used in the valuation were adopted by the Board of Trustees following the most recent experience study. The Retirement System is required to conduct an experience study every five years, but the scope of such a study is not necessarily limited to a five year period. An experience study was recently completed for the observation period of 2008-2012. The recommended rates were adopted by the Board, effective July 1, 2013. The experience was reviewed separately for Regular Teachers, Higher Education, School Lunch Plan A, and School Lunch Plan B. The prior and recently adopted rate tables are illustrated at the end of this exhibit.

MORTALITY ASSUMPTIONS:

Pre-retirement deaths and post-retirement life expectancies were previously based upon the RP-2000 table with no projection of mortality improvement. The table recently adopted by the Board, in accordance with the most recent Experience Study, is based upon the RP-2000 table with mortality projected through 2025 using scale AA.

EXHIBIT 6 (Continued)
Cost Methods & Assumptions

DISABILITY ASSUMPTION:

Rates for total and permanent disability were projected by age in accordance with the most recent Experience Study. The rates are based upon attained age at occurrence. For mortality after disability, rates are based upon the RP-2000 disability table with no projection of mortality improvement. This table did not change as a result of the most recent Experience Study.

RETIREMENT/DROP ASSUMPTION:

Eligibility for normal retirement benefits and DROP participation is based on age and service requirements that vary by plan. Previously, retirement and DROP rates were each determined for all plans and were age based. The most recent experience study developed the Retirement and DROP rates in combination and added a service component to the assumptions. Prior and recently adopted tables are shown at the end of this exhibit.

TERMINATION ASSUMPTIONS:

Voluntary termination or withdrawal rates are based on the most recent experience study. Rates for Regular Teachers and Higher Education members are based on select and ultimate age and service-based tables. Rate for Lunch Plan A and Lunch Plan B are service-based tables. For members terminating with vested benefits, it is assumed that 80% will not withdraw their accumulated employee contribution, and will receive a benefit beginning at age 60.

SALARY GROWTH:

The rates of annual salary growth are base upon the member's years of service. Rates were recently revised, in accordance with the recent Experience Study. The inflation component was changed from 3.0% to 2.5%. Prior and recently adopted tables are illustrated in the rate tables at the end of this exhibit. Current salaries and projected future salaries are limited to the Section 401(a)17 limit of the Internal Revenue Code, with no future indexed increases.

FAMILY STATISTICS:

The composition of the family is based on Current Population Reports published by the United States Census Bureau. Seventy-five percent of the membership is assumed to be married with the wife assumed to be three (3) years younger than the husband. These assumptions did not change as a result of the most recent Experience Study. Sample rates are as follows:

Age of Member	Number of Minor Children	Years for Youngest Child to Attain Majority
25	1.2	15
30	1.4	13
35	1.7	11
40	1.7	9
45	1.4	6
50	1.1	4

EXHIBIT 6 (Continued)
Cost Methods & Assumptions

ASSUMPTION FOR INCOMPLETE DATA:

Records identified as containing suspicious data or errors in data were assumed to possess the same characteristics of "good data" in the same cohort.

INVESTMENT EARNINGS:

The Board of Trustees adopted a discount rate of 8.00%, net of investment expenses and net of expected investment gains to be deferred to the experience account, which is expected to be approximately 50 basis points. This rate is effective July 1, 2013. The rate was chosen following an analysis to determine a reasonable range for the discount rate, which was based upon a study provided by the Board's investment consultant. The prior discount rate through June 30, 2013, was 8.25%, net of investment expenses.

The analysis that resulted in the recommended 8.00% rate was originally based upon capital market assumptions using a 3.0% inflation assumption. With the adoption of the revised actuarial assumptions following the recent experience study, the inflation assumption was changed from 3.0% to 2.5%. The discount rate analysis was revised and adjusted based on the revised inflation assumption. The 8.0% rate was determined to continue to be reasonable for purposes of this valuation.

CONVERTED LEAVE:

Converted Leave is assumed to increase the accrued benefit at retirement as follows according to the following table, based on the most recent experience study. The reduction from the prior rates to current rates shown below is due to statutory limits placed on the amount of leave earned after June 30, 1990 that can be converted to service credit.

	Prior Rates	Current Rates
Regular Teachers	2.5%	1.5%
Higher Education	2.8%	1.5%
Lunch Plan A	1.5%	1.0%
Lunch Plan B	1.5%	1.0%

ADMINISTRATIVE EXPENSES:

Administrative expenses are not explicitly assumed but rather funded in accordance with R.S. 11 Section 102, which by omission of language regarding the funding of administrative expenses precludes funding of these expenses by a direct allocation through the employer contribution rate. These expenses are instead funded through the employer rate as an experience loss which is amortized over a 30-year period. While this approach would not have been our original recommendation, further use of this practice will continue to produce stable contribution rates.

Actuarial Assumptions prior to July 1, 2013

TEACHERS
ACTUARIAL TABLES AND RATES
(* Retirement and DROP rates applicable to members hired prior to January 1, 2011)
Rates effective 6/30/08-6/30/13

AGE	DEATH RATES MALE	DEATH RATES FEMALE	DISABILITY RATES	TERMINATION RATES	RETIREMENT RATES *	DROP RATES *	DUR	SALARY SCALE
18	0.00032	0.00019	0.0000	0.05	0.000	0.00	1	1.055
19	0.00033	0.00019	0.0000	0.05	0.000	0.00	2	1.069
20	0.00034	0.00019	0.0000	0.10	0.000	0.00	3	1.064
21	0.00036	0.00019	0.0000	0.09	0.000	0.00	4	1.063
22	0.00037	0.00019	0.0000	0.04	0.000	0.00	5	1.062
23	0.00037	0.00020	0.0001	0.07	0.000	0.00	6	1.062
24	0.00038	0.00020	0.0001	0.13	0.000	0.00	7	1.061
25	0.00038	0.00021	0.0001	0.13	0.000	0.00	8	1.061
26	0.00038	0.00021	0.0001	0.13	0.000	0.00	9	1.060
27	0.00038	0.00022	0.0001	0.13	0.000	0.00	10	1.060
28	0.00039	0.00024	0.0001	0.13	0.000	0.00	11	1.059
29	0.00041	0.00025	0.0001	0.13	0.000	0.00	12	1.059
30	0.00044	0.00026	0.0001	0.13	0.000	0.00	13	1.057
31	0.00050	0.00031	0.0003	0.11	0.000	0.00	14	1.053
32	0.00056	0.00035	0.0003	0.11	0.000	0.00	15	1.051
33	0.00063	0.00039	0.0003	0.10	0.000	0.00	16	1.051
34	0.00070	0.00043	0.0003	0.10	0.000	0.00	17	1.051
35	0.00077	0.00047	0.0006	0.09	0.000	0.00	18	1.051
36	0.00084	0.00051	0.0010	0.08	0.000	0.00	19	1.051
37	0.00090	0.00055	0.0007	0.07	0.000	0.00	20	1.051
38	0.00096	0.00060	0.0007	0.06	0.020	0.00	21	1.048
39	0.00102	0.00065	0.0011	0.06	0.040	0.00	22	1.048
40	0.00108	0.00071	0.0011	0.06	0.040	0.00	23	1.048
41	0.00114	0.00077	0.0013	0.05	0.030	0.00	24	1.048
42	0.00121	0.00085	0.0016	0.05	0.030	0.00	25	1.048
43	0.00130	0.00094	0.0016	0.05	0.030	0.00	26	1.044
44	0.00140	0.00103	0.0016	0.04	0.030	0.00	27	1.044
45	0.00151	0.00112	0.0022	0.04	0.030	0.00	28	1.044
46	0.00162	0.00122	0.0022	0.04	0.030	0.00	29	1.048
47	0.00173	0.00133	0.0022	0.04	0.030	0.00	30	1.048
48	0.00186	0.00143	0.0022	0.03	0.030	0.01	31	1.048
49	0.00200	0.00155	0.0022	0.03	0.028	0.02	32	1.053
50	0.00214	0.00168	0.0025	0.03	0.028	0.03	33	1.053
51	0.00245	0.00185	0.0025	0.03	0.030	0.15	34	1.080
52	0.00267	0.00202	0.0025	0.04	0.035	0.50	35	1.058
53	0.00292	0.00221	0.0030	0.04	0.050	0.40	36	1.058
54	0.00320	0.00242	0.0030	0.04	0.075	0.40	37	1.058
55	0.00362	0.00272	0.0040	0.04	0.200	0.60	38	1.058
56	0.00420	0.00309	0.0050	0.04	0.230	0.15	39	1.058
57	0.00469	0.00348	0.0055	0.04	0.250	0.07	40	1.058
58	0.00527	0.00392	0.0055	0.04	0.365	0.07	41	1.058
59	0.00594	0.00444	0.0055	0.04	0.280	0.07	42	1.058
60	0.00675	0.00505	0.0080	0.04	0.280	0.15	43	1.058
61	0.00768	0.00581	0.0050	0.04	0.280	0.03	44	1.058
62	0.00876	0.00666	0.0035	0.04	0.280	0.01	45	1.058
63	0.01001	0.00765	0.0035	0.04	0.330	0.01	46	1.058
64	0.01128	0.00862	0.0035	0.04	0.330	0.01	47	1.058
65	0.01274	0.00971	0.0035	0.04	0.330	0.01	48	1.058
66	0.01441	0.01095	0.0020	0.04	0.400	0.00	49	1.058
67	0.01607	0.01216	0.0020	0.04	0.340	0.00	50	1.058
68	0.01787	0.01345	0.0020	0.04	0.340	0.00	51	1.058
69	0.01980	0.01486	0.0020	0.04	0.340	0.00	52	1.058
70	0.02221	0.01674	0.0020	0.04	0.340	0.00	53	1.058
71	0.02457	0.01858	0.0020	0.04	0.340	0.00	54	1.058
72	0.02728	0.02067	0.0020	0.04	0.500	0.00	55	1.058
73	0.03039	0.02297	0.0020	0.04	0.990	0.00	56	1.058
74	0.03390	0.02546	0.0020	0.04	0.990	0.00	57	1.058

Actuarial Assumptions prior to July 1, 2013

HIGHER EDUCATION
ACTUARIAL TABLES AND RATES
(* Retirement and DROP rates applicable to members hired prior to January 1, 2011)
Rates effective 6/30/08-6/30/13

	DEATH RATES		DISABILITY	TERMINATION	RETIREMENT	DROP		SALARY
AGE	MALE	FEMALE	RATES	RATES	RATES	RATES	DUR	SCALE
18	0.00032	0.00019	0.0000	0.05	0.00	0.00	1	1.055
19	0.00033	0.00019	0.0000	0.05	0.00	0.00	2	1.071
20	0.00034	0.00019	0.0000	0.05	0.00	0.00	3	1.057
21	0.00036	0.00019	0.0000	0.05	0.00	0.00	4	1.054
22	0.00037	0.00019	0.0000	0.05	0.00	0.00	5	1.054
23	0.00037	0.00020	0.0001	0.05	0.00	0.00	6	1.054
24	0.00038	0.00020	0.0001	0.10	0.00	0.00	7	1.054
25	0.00038	0.00021	0.0001	0.10	0.00	0.00	8	1.052
26	0.00038	0.00021	0.0001	0.16	0.00	0.00	9	1.052
27	0.00038	0.00022	0.0001	0.13	0.00	0.00	10	1.052
28	0.00039	0.00024	0.0001	0.12	0.00	0.00	11	1.050
29	0.00041	0.00025	0.0001	0.12	0.00	0.00	12	1.050
30	0.00044	0.00026	0.0001	0.12	0.00	0.00	13	1.050
31	0.00050	0.00031	0.0001	0.10	0.00	0.00	14	1.050
32	0.00056	0.00035	0.0001	0.12	0.00	0.00	15	1.050
33	0.00063	0.00039	0.0001	0.10	0.00	0.00	16	1.049
34	0.00070	0.00043	0.0001	0.10	0.00	0.00	17	1.049
35	0.00077	0.00047	0.0001	0.10	0.00	0.00	18	1.049
36	0.00084	0.00051	0.0001	0.07	0.00	0.00	19	1.048
37	0.00090	0.00055	0.0001	0.07	0.00	0.00	20	1.048
38	0.00096	0.00060	0.0001	0.08	0.00	0.00	21	1.048
39	0.00102	0.00065	0.0010	0.08	0.00	0.00	22	1.048
40	0.00108	0.00071	0.0010	0.07	0.05	0.00	23	1.045
41	0.00114	0.00077	0.0010	0.06	0.09	0.00	24	1.045
42	0.00121	0.00085	0.0010	0.05	0.09	0.00	25	1.045
43	0.00130	0.00094	0.0010	0.05	0.09	0.00	26	1.045
44	0.00140	0.00103	0.0010	0.05	0.09	0.00	27	1.045
45	0.00151	0.00112	0.0010	0.04	0.09	0.00	28	1.045
46	0.00162	0.00122	0.0010	0.04	0.09	0.00	29	1.045
47	0.00173	0.00133	0.0010	0.04	0.06	0.00	30	1.045
48	0.00186	0.00143	0.0010	0.03	0.06	0.00	31	1.045
49	0.00200	0.00155	0.0010	0.03	0.05	0.00	32	1.045
50	0.00214	0.00168	0.0010	0.02	0.04	0.00	33	1.045
51	0.00245	0.00185	0.0010	0.02	0.03	0.03	34	1.045
52	0.00267	0.00202	0.0040	0.02	0.05	0.07	35	1.045
53	0.00292	0.00221	0.0040	0.02	0.05	0.12	36	1.045
54	0.00320	0.00242	0.0010	0.02	0.09	0.12	37	1.045
55	0.00362	0.00272	0.0010	0.02	0.18	0.55	38	1.045
56	0.00420	0.00309	0.0010	0.02	0.18	0.10	39	1.045
57	0.00469	0.00348	0.0010	0.02	0.18	0.10	40	1.045
58	0.00527	0.00392	0.0010	0.02	0.28	0.07	41	1.045
59	0.00594	0.00444	0.0010	0.02	0.21	0.07	42	1.045
60	0.00675	0.00505	0.0010	0.02	0.28	0.07	43	1.045
61	0.00768	0.00581	0.0010	0.02	0.21	0.02	44	1.045
62	0.00876	0.00666	0.0010	0.02	0.21	0.01	45	1.045
63	0.01001	0.00765	0.0010	0.02	0.21	0.01	46	1.045
64	0.01128	0.00862	0.0010	0.02	0.21	0.01	47	1.045
65	0.01274	0.00971	0.0010	0.02	0.28	0.01	48	1.045
66	0.01441	0.01095	0.0010	0.02	0.28	0.01	49	1.045
67	0.01607	0.01216	0.0010	0.02	0.28	0.01	50	1.045
68	0.01787	0.01345	0.0010	0.02	0.28	0.01	51	1.045
69	0.01980	0.01486	0.0005	0.02	0.20	0.01	52	1.045
70	0.02221	0.01674	0.0005	0.02	0.20	0.01	53	1.045
71	0.02457	0.01858	0.0005	0.02	0.20	0.01	54	1.045
72	0.02728	0.02067	0.0005	0.02	0.50	0.01	55	1.045
73	0.03039	0.02297	0.0005	0.02	0.50	0.01	56	1.045
74	0.03390	0.02546	0.0005	0.02	0.99	0.01	57	1.045

Actuarial Assumptions prior to July 1, 2013

REGULAR TEACHERS AND HIGHER EDUCATION, HIRED ON OR AFTER 1/1/2011
ACTUARIAL TABLES AND RATES
Rates effective 6/30/08-6/30/13

	REGULAR		HIGHER EDUCATION	
	RETIREMENT	DROP	RETIREMENT	DROP
AGE	RATES	RATES	RATES	RATES
18	0.00	0.00	0.00	0.00
19	0.00	0.00	0.00	0.00
20	0.00	0.00	0.00	0.00
21	0.00	0.00	0.00	0.00
22	0.00	0.00	0.00	0.00
23	0.00	0.00	0.00	0.00
24	0.00	0.00	0.00	0.00
25	0.00	0.00	0.00	0.00
26	0.00	0.00	0.00	0.00
27	0.00	0.00	0.00	0.00
28	0.00	0.00	0.00	0.00
29	0.00	0.00	0.00	0.00
30	0.00	0.00	0.00	0.00
31	0.00	0.00	0.00	0.00
32	0.00	0.00	0.00	0.00
33	0.00	0.00	0.00	0.00
34	0.00	0.00	0.00	0.00
35	0.00	0.00	0.00	0.00
36	0.00	0.00	0.00	0.00
37	0.00	0.00	0.00	0.00
38	0.00	0.00	0.00	0.00
39	0.00	0.00	0.00	0.00
40	0.00	0.00	0.00	0.00
41	0.00	0.00	0.00	0.00
42	0.00	0.00	0.00	0.00
43	0.00	0.00	0.00	0.00
44	0.00	0.00	0.00	0.00
45	0.00	0.00	0.00	0.00
46	0.00	0.00	0.00	0.00
47	0.00	0.00	0.00	0.00
48	0.00	0.00	0.00	0.00
49	0.00	0.00	0.00	0.00
50	0.00	0.00	0.00	0.00
51	0.00	0.00	0.00	0.00
52	0.00	0.00	0.00	0.00
53	0.00	0.00	0.00	0.00
54	0.00	0.00	0.00	0.00
55	0.00	0.00	0.00	0.00
56	0.00	0.00	0.00	0.00
57	0.00	0.00	0.00	0.00
58	0.00	0.00	0.00	0.00
59	0.00	0.00	0.00	0.00
60	0.75	0.35	0.50	0.25
61	0.28	0.03	0.21	0.02
62	0.28	0.01	0.21	0.01
63	0.33	0.01	0.21	0.01
64	0.33	0.01	0.21	0.01
65	0.33	0.01	0.28	0.01
66	0.40	0.00	0.28	0.01
67	0.34	0.00	0.28	0.01
68	0.34	0.00	0.28	0.01
69	0.34	0.00	0.20	0.01
70	0.34	0.00	0.20	0.01
71	0.34	0.00	0.20	0.01
72	0.50	0.00	0.50	0.01
73	0.99	0.00	0.50	0.01
74	0.99	0.00	0.99	0.01

Actuarial Assumptions prior to July 1, 2013

LUNCH PLAN A
ACTUARIAL TABLES AND RATES
Rates effective 6/30/08-6/30/13

	DEATH RATES		DISABILITY	TERMINATION	RETIREMENT	DROP		SALARY
AGE	MALE	FEMALE	RATES	RATES	RATES	RATES	DUR	SCALE
18	0.00032	0.00019	0.0000	0.00	0.00	0.00	1	1.065
19	0.00033	0.00019	0.0000	0.00	0.00	0.00	2	1.075
20	0.00034	0.00019	0.0000	0.00	0.00	0.00	3	1.070
21	0.00036	0.00019	0.0000	0.00	0.00	0.00	4	1.066
22	0.00037	0.00019	0.0000	0.00	0.00	0.00	5	1.066
23	0.00037	0.00020	0.0000	0.00	0.00	0.00	6	1.058
24	0.00038	0.00020	0.0000	0.00	0.00	0.00	7	1.058
25	0.00038	0.00021	0.0000	0.00	0.00	0.00	8	1.058
26	0.00038	0.00021	0.0000	0.00	0.00	0.00	9	1.058
27	0.00038	0.00022	0.0000	0.00	0.00	0.00	10	1.045
28	0.00039	0.00024	0.0000	0.00	0.00	0.00	11	1.045
29	0.00041	0.00025	0.0000	0.00	0.00	0.00	12	1.045
30	0.00044	0.00026	0.0000	0.02	0.00	0.00	13	1.045
31	0.00050	0.00031	0.0001	0.02	0.00	0.00	14	1.045
32	0.00056	0.00035	0.0001	0.02	0.00	0.00	15	1.045
33	0.00063	0.00039	0.0001	0.02	0.00	0.00	16	1.045
34	0.00070	0.00043	0.0001	0.02	0.00	0.00	17	1.045
35	0.00077	0.00047	0.0001	0.02	0.00	0.00	18	1.045
36	0.00084	0.00051	0.0001	0.02	0.00	0.00	19	1.045
37	0.00090	0.00055	0.0001	0.02	0.00	0.00	20	1.052
38	0.00096	0.00060	0.0001	0.02	0.00	0.00	21	1.045
39	0.00102	0.00065	0.0001	0.02	0.00	0.00	22	1.040
40	0.00108	0.00071	0.0001	0.02	0.00	0.00	23	1.040
41	0.00114	0.00077	0.0001	0.02	0.00	0.00	24	1.045
42	0.00121	0.00085	0.0001	0.02	0.00	0.00	25	1.045
43	0.00130	0.00094	0.0001	0.02	0.00	0.00	26	1.048
44	0.00140	0.00103	0.0100	0.02	0.00	0.00	27	1.048
45	0.00151	0.00112	0.0100	0.02	0.00	0.00	28	1.048
46	0.00162	0.00122	0.0100	0.02	0.00	0.00	29	1.048
47	0.00173	0.00133	0.0100	0.02	0.00	0.00	30	1.050
48	0.00186	0.00143	0.0100	0.02	0.00	0.02	31	1.050
49	0.00200	0.00155	0.0150	0.02	0.01	0.02	32	1.060
50	0.00214	0.00168	0.0150	0.02	0.01	0.02	33	1.050
51	0.00245	0.00185	0.0150	0.02	0.01	0.02	34	1.050
52	0.00267	0.00202	0.0150	0.02	0.01	0.02	35	1.050
53	0.00292	0.00221	0.0150	0.02	0.03	0.02	36	1.045
54	0.00320	0.00242	0.0150	0.02	0.03	0.02	37	1.045
55	0.00362	0.00272	0.0300	0.02	0.15	0.50	38	1.045
56	0.00420	0.00309	0.0250	0.02	0.15	0.20	39	1.045
57	0.00469	0.00348	0.0250	0.02	0.15	0.20	40	1.045
58	0.00527	0.00392	0.0250	0.02	0.25	0.20	41	1.045
59	0.00594	0.00444	0.0250	0.02	0.25	0.20	42	1.045
60	0.00675	0.00505	0.0100	0.02	0.35	0.55	43	1.045
61	0.00768	0.00581	0.0002	0.01	0.35	0.20	44	1.045
62	0.00876	0.00666	0.0002	0.01	0.35	0.10	45	1.045
63	0.01001	0.00765	0.0002	0.01	0.50	0.02	46	1.045
64	0.01128	0.00862	0.0002	0.01	0.50	0.02	47	1.045
65	0.01274	0.00971	0.0002	0.01	0.40	0.02	48	1.045
66	0.01441	0.01095	0.0002	0.01	0.40	0.02	49	1.045
67	0.01607	0.01216	0.0002	0.01	0.35	0.02	50	1.045
68	0.01787	0.01345	0.0002	0.01	0.25	0.02	51	1.045
69	0.01980	0.01486	0.0000	0.01	0.20	0.02	52	1.045
70	0.02221	0.01674	0.0000	0.01	0.20	0.02	53	1.045
71	0.02457	0.01858	0.0000	0.01	0.20	0.02	54	1.045
72	0.02728	0.02067	0.0000	0.01	0.50	0.02	55	1.045
73	0.03039	0.02297	0.0000	0.01	0.50	0.02	56	1.045
74	0.03390	0.02546	0.0000	0.01	0.99	0.02	57	1.045

Actuarial Assumptions prior to July 1, 2013

LUNCH PLAN B
ACTUARIAL TABLES AND RATES
Rates effective 6/30/08-6/30/13

	DEATH RATES		DISABILITY	TERMINATION	RETIREMENT	DROP		SALARY
AGE	MALE	FEMALE	RATES	RATES	RATES	RATES	DUR	SCALE
18	0.00032	0.00019	0.0000	0.00	0.00	0.00	1	1.065
19	0.00033	0.00019	0.0000	0.00	0.00	0.00	2	1.075
20	0.00034	0.00019	0.0000	0.00	0.00	0.00	3	1.070
21	0.00036	0.00019	0.0000	0.00	0.00	0.00	4	1.066
22	0.00037	0.00019	0.0000	0.10	0.00	0.00	5	1.066
23	0.00037	0.00020	0.0000	0.10	0.00	0.00	6	1.058
24	0.00038	0.00020	0.0000	0.10	0.00	0.00	7	1.058
25	0.00038	0.00021	0.0000	0.20	0.00	0.00	8	1.058
26	0.00038	0.00021	0.0000	0.15	0.00	0.00	9	1.058
27	0.00038	0.00022	0.0000	0.07	0.00	0.00	10	1.055
28	0.00039	0.00024	0.0000	0.07	0.00	0.00	11	1.055
29	0.00041	0.00025	0.0000	0.07	0.00	0.00	12	1.055
30	0.00044	0.00026	0.0000	0.07	0.00	0.00	13	1.055
31	0.00050	0.00031	0.0000	0.07	0.00	0.00	14	1.050
32	0.00056	0.00035	0.0000	0.07	0.00	0.00	15	1.050
33	0.00063	0.00039	0.0000	0.07	0.00	0.00	16	1.050
34	0.00070	0.00043	0.0000	0.07	0.00	0.00	17	1.050
35	0.00077	0.00047	0.0000	0.07	0.00	0.00	18	1.050
36	0.00084	0.00051	0.0010	0.07	0.00	0.00	19	1.050
37	0.00090	0.00055	0.0010	0.07	0.00	0.00	20	1.050
38	0.00096	0.00060	0.0010	0.06	0.00	0.00	21	1.043
39	0.00102	0.00065	0.0010	0.06	0.00	0.00	22	1.043
40	0.00108	0.00071	0.0030	0.06	0.00	0.00	23	1.043
41	0.00114	0.00077	0.0030	0.06	0.00	0.00	24	1.043
42	0.00121	0.00085	0.0030	0.06	0.00	0.00	25	1.043
43	0.00130	0.00094	0.0030	0.05	0.00	0.00	26	1.043
44	0.00140	0.00103	0.0030	0.04	0.00	0.00	27	1.043
45	0.00151	0.00112	0.0030	0.04	0.00	0.00	28	1.043
46	0.00162	0.00122	0.0030	0.04	0.00	0.00	29	1.043
47	0.00173	0.00133	0.0060	0.04	0.00	0.00	30	1.043
48	0.00186	0.00143	0.0060	0.03	0.00	0.00	31	1.043
49	0.00200	0.00155	0.0060	0.03	0.00	0.00	32	1.035
50	0.00214	0.00168	0.0150	0.03	0.00	0.00	33	1.035
51	0.00245	0.00185	0.0150	0.03	0.00	0.00	34	1.035
52	0.00267	0.00202	0.0150	0.03	0.00	0.00	35	1.035
53	0.00292	0.00221	0.0150	0.03	0.00	0.00	36	1.035
54	0.00320	0.00242	0.0255	0.03	0.00	0.30	37	1.035
55	0.00362	0.00272	0.0255	0.03	0.35	0.50	38	1.035
56	0.00420	0.00309	0.0255	0.03	0.33	0.45	39	1.035
57	0.00469	0.00348	0.0255	0.03	0.30	0.15	40	1.035
58	0.00527	0.00392	0.0255	0.03	0.30	0.15	41	1.035
59	0.00594	0.00444	0.0255	0.03	0.30	0.15	42	1.035
60	0.00675	0.00505	0.0050	0.03	0.30	0.15	43	1.035
61	0.00768	0.00581	0.0050	0.03	0.30	0.03	44	1.035
62	0.00876	0.00666	0.0050	0.03	0.30	0.01	45	1.035
63	0.01001	0.00765	0.0050	0.03	0.45	0.01	46	1.035
64	0.01128	0.00862	0.0050	0.03	0.45	0.01	47	1.035
65	0.01274	0.00971	0.0030	0.03	0.30	0.01	48	1.035
66	0.01441	0.01095	0.0030	0.03	0.25	0.01	49	1.035
67	0.01607	0.01216	0.0030	0.03	0.25	0.01	50	1.035
68	0.01787	0.01345	0.0030	0.03	0.25	0.01	51	1.035
69	0.01980	0.01486	0.0000	0.03	0.25	0.01	52	1.035
70	0.02221	0.01674	0.0000	0.03	0.50	0.01	53	1.035
71	0.02457	0.01858	0.0000	0.03	0.50	0.01	54	1.035
72	0.02728	0.02067	0.0000	0.03	0.50	0.01	55	1.035
73	0.03039	0.02297	0.0000	0.03	0.50	0.01	56	1.035
74	0.03390	0.02546	0.0000	0.03	0.99	0.01	57	1.035

Actuarial Assumptions, effective July 1, 2013
Regular Teachers

AGE	DEATH RATES		DISABILITY RATES	TERMINATION RATES				RETIREMENT/DROP RATES			DUR	SALARY INCREASE
	MALE	FEMALE		< 1 YEAR	1-2 YEARS	2-3 YEARS	4+ YEARS	< 25 YOS	25-29 YOS	30+ YOS		
18	0.00020	0.00013	0.0000	0.200	0.200	0.095	0.180	0.000	0.000	0.000	**0**	0.0575
19	0.00021	0.00013	0.0000	0.200	0.200	0.095	0.180	0.000	0.000	0.000	**1**	0.0575
20	0.00021	0.00013	0.0000	0.200	0.200	0.095	0.180	0.000	0.000	0.000	**2**	0.0575
21	0.00023	0.00013	0.0000	0.200	0.200	0.095	0.180	0.000	0.000	0.000	**3**	0.0575
22	0.00024	0.00013	0.0000	0.200	0.200	0.095	0.180	0.000	0.000	0.000	**4**	0.0575
23	0.00026	0.00013	0.0001	0.200	0.200	0.095	0.180	0.000	0.000	0.000	**5**	0.0500
24	0.00027	0.00014	0.0001	0.200	0.200	0.095	0.180	0.000	0.000	0.000	**6**	0.0500
25	0.00029	0.00015	0.0001	0.180	0.126	0.095	0.090	0.000	0.000	0.000	**7**	0.0500
26	0.00033	0.00016	0.0001	0.180	0.126	0.095	0.060	0.000	0.000	0.000	**8**	0.0500
27	0.00034	0.00017	0.0001	0.190	0.126	0.095	0.060	0.000	0.000	0.000	**9**	0.0500
28	0.00035	0.00017	0.0001	0.190	0.126	0.095	0.055	0.000	0.000	0.000	**10**	0.0475
29	0.00036	0.00018	0.0001	0.190	0.126	0.095	0.053	0.000	0.000	0.000	**11**	0.0475
30	0.00039	0.00021	0.0001	0.190	0.120	0.109	0.053	0.000	0.000	0.000	**12**	0.0475
31	0.00044	0.00025	0.0003	0.190	0.120	0.109	0.050	0.000	0.000	0.000	**13**	0.0475
32	0.00050	0.00029	0.0003	0.190	0.120	0.109	0.045	0.000	0.000	0.000	**14**	0.0475
33	0.00056	0.00031	0.0003	0.190	0.120	0.109	0.045	0.000	0.000	0.000	**15**	0.0450
34	0.00062	0.00034	0.0003	0.190	0.120	0.109	0.045	0.000	0.000	0.000	**16**	0.0450
35	0.00068	0.00036	0.0006	0.180	0.117	0.095	0.040	0.000	0.000	0.000	**17**	0.0450
36	0.00074	0.00038	0.0010	0.180	0.117	0.095	0.040	0.000	0.000	0.000	**18**	0.0450
37	0.00080	0.00040	0.0007	0.180	0.117	0.095	0.040	0.000	0.000	0.000	**19**	0.0450
38	0.00083	0.00042	0.0007	0.180	0.117	0.095	0.040	0.050	0.000	0.000	**20**	0.0400
39	0.00086	0.00044	0.0011	0.180	0.117	0.095	0.040	0.040	0.000	0.000	**21**	0.0400
40	0.00088	0.00048	0.0011	0.165	0.123	0.090	0.037	0.040	0.000	0.000	**22**	0.0400
41	0.00091	0.00053	0.0013	0.165	0.123	0.090	0.037	0.025	0.000	0.000	**23**	0.0400
42	0.00095	0.00058	0.0016	0.165	0.123	0.090	0.037	0.025	0.000	0.000	**24**	0.0400
43	0.00099	0.00064	0.0016	0.165	0.123	0.090	0.037	0.025	0.000	0.000	**25**	0.0375
44	0.00103	0.00071	0.0016	0.165	0.123	0.090	0.040	0.025	0.000	0.000	**26**	0.0375
45	0.00109	0.00075	0.0022	0.163	0.099	0.090	0.040	0.025	0.020	0.000	**27**	0.0375
46	0.00114	0.00080	0.0022	0.163	0.099	0.090	0.040	0.025	0.020	0.000	**28**	0.0375
47	0.00119	0.00084	0.0022	0.163	0.099	0.090	0.040	0.025	0.020	0.000	**29**	0.0375
48	0.00124	0.00091	0.0022	0.163	0.099	0.090	0.040	0.030	0.020	0.700	**30**	0.0425
49	0.00130	0.00098	0.0022	0.163	0.099	0.090	0.040	0.030	0.020	0.600	**31**	0.0425
50	0.00136	0.00109	0.0025	0.175	0.112	0.090	0.040	0.030	0.050	0.300	**32**	0.0425
51	0.00152	0.00124	0.0025	0.175	0.112	0.090	0.040	0.030	0.170	0.600	**33**	0.0425
52	0.00161	0.00142	0.0025	0.175	0.112	0.090	0.040	0.030	0.280	0.600	**34**	0.0425
53	0.00176	0.00163	0.0030	0.175	0.112	0.090	0.040	0.100	0.280	0.500	**35**	0.0425
54	0.00193	0.00189	0.0030	0.175	0.112	0.090	0.040	0.150	0.450	0.400	**36**	0.0425
55	0.00224	0.00222	0.0040	0.175	0.106	0.090	0.040	0.150	0.750	0.300	**37**	0.0425
56	0.00267	0.00266	0.0050	0.175	0.106	0.090	0.040	0.150	0.330	0.200	**38**	0.0425
57	0.00306	0.00307	0.0055	0.155	0.106	0.090	0.040	0.150	0.250	0.200	**39**	0.0425
58	0.00352	0.00346	0.0055	0.200	0.106	0.090	0.040	0.250	0.250	0.200	**40**	0.0425
59	0.00397	0.00392	0.0055	0.200	0.106	0.090	0.040	0.250	0.300	0.200	**41**	0.0425
60	0.00451	0.00446	0.0055	0.200	0.106	0.090	0.040	0.250	0.300	0.200	**42**	0.0425
61	0.00526	0.00513	0.0050	0.200	0.106	0.090	0.040	0.150	0.300	0.200	**43**	0.0425
62	0.00600	0.00587	0.0050	0.200	0.106	0.090	0.040	0.150	0.220	0.250	**44**	0.0425
63	0.00704	0.00675	0.0050	0.200	0.106	0.090	0.040	0.150	0.170	0.150	**45**	0.0425
64	0.00793	0.00760	0.0035	0.200	0.106	0.090	0.040	0.200	0.200	0.300	**46**	0.0425
65	0.00895	0.00856	0.0035	0.200	0.106	0.090	0.040	0.200	0.200	0.300	**47**	0.0425
66	0.01039	0.00966	0.0020	0.200	0.106	0.090	0.040	0.200	0.200	0.300	**48**	0.0425
67	0.01159	0.01073	0.0020	0.200	0.106	0.090	0.040	0.200	0.200	0.200	**49**	0.0425
68	0.01256	0.01186	0.0020	0.200	0.106	0.090	0.040	0.200	0.300	0.300	**50**	0.0425
69	0.01392	0.01311	0.0020	0.200	0.106	0.090	0.040	0.200	0.300	0.300	**51**	0.0425
70	0.01522	0.01477	0.0020	0.200	0.106	0.090	0.040	0.200	0.300	0.400	**52**	0.0425
71	0.01684	0.01598	0.0020	0.200	0.106	0.090	0.040	0.200	0.300	0.200	**53**	0.0425
72	0.01870	0.01778	0.0020	0.200	0.106	0.090	0.040	0.200	0.300	0.250	**54**	0.0425
73	0.02083	0.01927	0.0020	0.200	0.106	0.090	0.040	0.200	0.300	0.250	**55**	0.0425
74	0.02323	0.02136	0.0020	0.200	0.106	0.090	0.040	0.200	0.300	0.250	**56**	0.0425

Actuarial Assumptions, effective July 1, 2013
Higher Education

AGE	DEATH RATES		DISABILITY RATES	TERMINATION RATES				RETIREMENT/DROP RATES			DUR	SALARY INCREASE
	MALE	FEMALE		< 1 YEAR	1-2 YEARS	2-3 YEARS	4+ YEARS	< 25 YOS	25-29 YOS	30+ YOS		
18	0.00020	0.00013	0.0000	0.250	0.250	0.170	0.120	0.000	0.000	0.000	**0**	0.100
19	0.00021	0.00013	0.0000	0.250	0.250	0.170	0.120	0.000	0.000	0.000	**1**	0.100
20	0.00021	0.00013	0.0000	0.250	0.250	0.170	0.120	0.000	0.000	0.000	**2**	0.090
21	0.00023	0.00013	0.0000	0.250	0.250	0.170	0.120	0.000	0.000	0.000	**3**	0.080
22	0.00024	0.00013	0.0000	0.250	0.250	0.170	0.120	0.000	0.000	0.000	**4**	0.040
23	0.00026	0.00013	0.0001	0.250	0.250	0.170	0.120	0.000	0.000	0.000	**5**	0.070
24	0.00027	0.00014	0.0001	0.250	0.250	0.170	0.120	0.000	0.000	0.000	**6**	0.050
25	0.00029	0.00015	0.0001	0.250	0.250	0.170	0.120	0.000	0.000	0.000	**7**	0.070
26	0.00033	0.00016	0.0001	0.210	0.250	0.170	0.120	0.000	0.000	0.000	**8**	0.070
27	0.00034	0.00017	0.0001	0.210	0.220	0.170	0.120	0.000	0.000	0.000	**9**	0.045
28	0.00035	0.00017	0.0001	0.220	0.220	0.170	0.120	0.000	0.000	0.000	**10**	0.045
29	0.00036	0.00018	0.0001	0.240	0.220	0.170	0.120	0.000	0.000	0.000	**11**	0.045
30	0.00039	0.00021	0.0001	0.250	0.160	0.170	0.180	0.000	0.000	0.000	**12**	0.045
31	0.00044	0.00025	0.0001	0.220	0.178	0.170	0.100	0.000	0.000	0.000	**13**	0.045
32	0.00050	0.00029	0.0001	0.220	0.190	0.160	0.100	0.000	0.000	0.000	**14**	0.040
33	0.00056	0.00031	0.0001	0.190	0.170	0.150	0.120	0.000	0.000	0.000	**15**	0.040
34	0.00062	0.00034	0.0001	0.230	0.155	0.100	0.120	0.000	0.000	0.000	**16**	0.040
35	0.00068	0.00036	0.0001	0.220	0.175	0.130	0.120	0.000	0.000	0.000	**17**	0.040
36	0.00074	0.00038	0.0001	0.220	0.160	0.150	0.120	0.000	0.000	0.000	**18**	0.040
37	0.00080	0.00040	0.0001	0.220	0.108	0.150	0.120	0.000	0.000	0.000	**19**	0.040
38	0.00083	0.00042	0.0001	0.190	0.180	0.150	0.100	0.100	0.080	0.600	**20**	0.040
39	0.00086	0.00044	0.0001	0.190	0.140	0.150	0.100	0.100	0.080	0.600	**21**	0.040
40	0.00088	0.00048	0.0001	0.230	0.185	0.150	0.100	0.100	0.080	0.600	**22**	0.040
41	0.00091	0.00053	0.0001	0.165	0.108	0.150	0.100	0.100	0.080	0.600	**23**	0.040
42	0.00095	0.00058	0.0001	0.230	0.115	0.150	0.100	0.100	0.080	0.400	**24**	0.040
43	0.00099	0.00064	0.0001	0.155	0.168	0.150	0.100	0.070	0.080	0.200	**25**	0.040
44	0.00103	0.00071	0.0001	0.195	0.135	0.150	0.100	0.070	0.080	0.050	**26**	0.040
45	0.00109	0.00075	0.0001	0.190	0.116	0.150	0.100	0.070	0.080	0.050	**27**	0.035
46	0.00114	0.00080	0.0008	0.162	0.170	0.150	0.080	0.070	0.080	0.050	**28**	0.035
47	0.00119	0.00084	0.0008	0.210	0.140	0.150	0.090	0.070	0.080	0.050	**29**	0.035
48	0.00124	0.00091	0.0008	0.135	0.180	0.150	0.090	0.070	0.080	0.050	**30**	0.035
49	0.00130	0.00098	0.0008	0.135	0.125	0.150	0.090	0.070	0.080	0.120	**31**	0.035
50	0.00136	0.00109	0.0008	0.185	0.108	0.060	0.090	0.070	0.080	0.120	**32**	0.035
51	0.00152	0.00124	0.0008	0.145	0.070	0.050	0.090	0.070	0.160	0.120	**33**	0.035
52	0.00161	0.00142	0.0008	0.155	0.110	0.095	0.090	0.070	0.160	0.120	**34**	0.035
53	0.00176	0.00163	0.0008	0.220	0.130	0.125	0.090	0.070	0.160	0.200	**35**	0.035
54	0.00193	0.00189	0.0008	0.220	0.075	0.017	0.090	0.150	0.280	0.180	**36**	0.035
55	0.00224	0.00222	0.0008	0.200	0.104	0.140	0.090	0.150	0.350	0.180	**37**	0.035
56	0.00267	0.00266	0.0020	0.135	0.122	0.100	0.080	0.150	0.200	0.180	**38**	0.035
57	0.00306	0.00307	0.0020	0.250	0.055	0.140	0.080	0.150	0.130	0.280	**39**	0.035
58	0.00352	0.00346	0.0020	0.100	0.115	0.200	0.100	0.150	0.130	0.280	**40**	0.035
59	0.00397	0.00392	0.0005	0.100	0.210	0.125	0.080	0.150	0.130	0.200	**41**	0.035
60	0.00451	0.00446	0.0005	0.150	0.160	0.090	0.060	0.150	0.130	0.200	**42**	0.035
61	0.00526	0.00513	0.0005	0.150	0.160	0.090	0.060	0.120	0.120	0.200	**43**	0.035
62	0.00600	0.00587	0.0005	0.150	0.160	0.090	0.060	0.120	0.120	0.200	**44**	0.035
63	0.00704	0.00675	0.0005	0.150	0.160	0.090	0.060	0.120	0.120	1.000	**45**	0.035
64	0.00793	0.00760	0.0005	0.150	0.160	0.090	0.060	0.120	0.120	1.000	**46**	0.035
65	0.00895	0.00856	0.0005	0.150	0.160	0.090	0.060	0.120	0.160	1.000	**47**	0.035
66	0.01039	0.00966	0.0005	0.150	0.160	0.090	0.060	0.120	0.160	1.000	**48**	0.035
67	0.01159	0.01073	0.0005	0.150	0.160	0.090	0.060	0.120	0.160	1.000	**49**	0.035
68	0.01256	0.01186	0.0005	0.150	0.160	0.090	0.060	0.120	0.160	1.000	**50**	0.035
69	0.01392	0.01311	0.0005	0.150	0.160	0.090	0.060	0.120	0.160	1.000	**51**	0.035
70	0.01522	0.01477	0.0005	0.150	0.160	0.090	0.060	0.120	0.160	1.000	**52**	0.035
71	0.01684	0.01598	0.0000	0.150	0.160	0.090	0.060	0.120	0.160	1.000	**53**	0.035
72	0.01870	0.01778	0.0000	0.150	0.160	0.090	0.060	0.120	0.160	1.000	**54**	0.035
73	0.02083	0.01927	0.0000	0.150	0.160	0.090	0.060	0.120	0.160	1.000	**55**	0.035
74	0.02323	0.02136	0.0000	0.150	0.160	0.090	0.060	0.120	0.160	1.000	**56**	0.035

Actuarial Assumptions, effective July 1, 2013
Lunch Plan A

AGE	DEATH RATES		DISABILITY RATES	RETIREMENT/DROP RATES	
	MALE	FEMALE		< 30 YOS	>= 30 YOS
18	0.00020	0.00013	0.0000	0.000	0.000
19	0.00021	0.00013	0.0000	0.000	0.000
20	0.00021	0.00013	0.0000	0.000	0.000
21	0.00023	0.00013	0.0000	0.000	0.000
22	0.00024	0.00013	0.0000	0.000	0.000
23	0.00026	0.00013	0.0000	0.000	0.000
24	0.00027	0.00014	0.0000	0.000	0.000
25	0.00029	0.00015	0.0000	0.000	0.000
26	0.00033	0.00016	0.0000	0.000	0.000
27	0.00034	0.00017	0.0000	0.000	0.000
28	0.00035	0.00017	0.0000	0.000	0.000
29	0.00036	0.00018	0.0000	0.000	0.000
30	0.00039	0.00021	0.0000	0.000	0.000
31	0.00044	0.00025	0.0001	0.000	0.000
32	0.00050	0.00029	0.0001	0.000	0.000
33	0.00056	0.00031	0.0001	0.000	0.000
34	0.00062	0.00034	0.0001	0.000	0.000
35	0.00068	0.00036	0.0001	0.000	0.000
36	0.00074	0.00038	0.0001	0.000	0.000
37	0.00080	0.00040	0.0001	0.000	0.000
38	0.00083	0.00042	0.0001	0.600	0.300
39	0.00086	0.00044	0.0001	0.600	0.300
40	0.00088	0.00048	0.0001	0.600	0.300
41	0.00091	0.00053	0.0001	0.600	0.300
42	0.00095	0.00058	0.0001	0.600	0.300
43	0.00099	0.00064	0.0001	0.600	0.300
44	0.00103	0.00071	0.0001	0.600	0.300
45	0.00109	0.00075	0.0001	0.600	0.300
46	0.00114	0.00080	0.0001	0.600	0.300
47	0.00119	0.00084	0.0001	0.600	0.300
48	0.00124	0.00091	0.0001	0.600	0.300
49	0.00130	0.00098	0.0100	0.600	0.300
50	0.00136	0.00109	0.0100	0.600	0.300
51	0.00152	0.00124	0.0100	0.600	0.300
52	0.00161	0.00142	0.0150	0.600	0.700
53	0.00176	0.00163	0.0175	0.600	0.700
54	0.00193	0.00189	0.0175	0.600	0.700
55	0.00224	0.00222	0.0175	0.800	0.700
56	0.00267	0.00266	0.0002	0.350	0.700
57	0.00306	0.00307	0.0002	0.350	0.700
58	0.00352	0.00346	0.0002	0.350	0.700
59	0.00397	0.00392	0.0002	0.600	0.700
60	0.00451	0.00446	0.0002	0.450	0.700
61	0.00526	0.00513	0.0002	0.200	0.500
62	0.00600	0.00587	0.0002	0.200	0.500
63	0.00704	0.00675	0.0002	0.350	0.500
64	0.00793	0.00760	0.0002	0.100	0.500
65	0.00895	0.00856	0.0002	0.100	0.500
66	0.01039	0.00966	0.0002	0.100	0.250
67	0.01159	0.01073	0.0002	0.200	0.250
68	0.01256	0.01186	0.0002	0.200	0.250
69	0.01392	0.01311	0.0000	0.200	0.250
70	0.01522	0.01477	0.0000	0.200	0.250
71	0.01684	0.01598	0.0000	0.200	0.250
72	0.01870	0.01778	0.0000	0.200	0.250
73	0.02083	0.01927	0.0000	0.200	0.250
74	0.02323	0.02136	0.0000	0.200	0.250

DUR	TERMINATION RATES	SALARY INCREASE
0	0.14	0.06
1	0.14	0.06
2	0.14	0.06
3	0.14	0.06
4	0.14	0.06
5	0.14	0.06
6	0.14	0.06
7	0.14	0.06
8	0.14	0.06
9	0.14	0.06
10	0.14	0.06
11	0.14	0.06
12	0.14	0.05
13	0.14	0.05
14	0.14	0.05
15	0.14	0.06
16	0.14	0.06
17	0.14	0.07
18	0.14	0.07
19	0.14	0.04
20	0.14	0.04
21	0.14	0.04
22	0.14	0.04
23	0.14	0.06
24	0.14	0.06
25	0.14	0.04
26	0.14	0.04
27	0.14	0.04
28	0.14	0.04
29	0.14	0.04
30	0.14	0.04
31	0.14	0.04
32	0.14	0.04
33	0.14	0.04
34	0.14	0.04
35	0.14	0.04
36	0.14	0.04
37	0.14	0.04
38	0.14	0.04
39	0.14	0.04
40	0.14	0.04
41	0.14	0.04
42	0.14	0.04
43	0.14	0.04
44	0.14	0.04
45	0.14	0.04
46	0.14	0.04
47	0.14	0.04
48	0.14	0.04
49	0.14	0.04
50	0.14	0.04
51	0.14	0.04
52	0.14	0.04
53	0.14	0.04
54	0.14	0.04
55	0.14	0.04
56	0.14	0.04

Actuarial Assumptions, effective July 1, 2013
Lunch Plan B

AGE	DEATH RATES		DISABILITY RATES	RETIREMENT/DROP RATES
	MALE	FEMALE		
18	0.00020	0.00013	0.0000	0.00
19	0.00021	0.00013	0.0000	0.00
20	0.00021	0.00013	0.0000	0.00
21	0.00023	0.00013	0.0000	0.00
22	0.00024	0.00013	0.0000	0.00
23	0.00026	0.00013	0.0000	0.00
24	0.00027	0.00014	0.0000	0.00
25	0.00029	0.00015	0.0000	0.00
26	0.00033	0.00016	0.0000	0.00
27	0.00034	0.00017	0.0000	0.00
28	0.00035	0.00017	0.0000	0.00
29	0.00036	0.00018	0.0000	0.00
30	0.00039	0.00021	0.0000	0.00
31	0.00044	0.00025	0.0000	0.00
32	0.00050	0.00029	0.0000	0.00
33	0.00056	0.00031	0.0000	0.00
34	0.00062	0.00034	0.0000	0.00
35	0.00068	0.00036	0.0000	0.00
36	0.00074	0.00038	0.0010	0.00
37	0.00080	0.00040	0.0010	0.00
38	0.00083	0.00042	0.0010	0.00
39	0.00086	0.00044	0.0010	0.00
40	0.00088	0.00048	0.0050	0.00
41	0.00091	0.00053	0.0050	0.00
42	0.00095	0.00058	0.0050	0.00
43	0.00099	0.00064	0.0050	0.00
44	0.00103	0.00071	0.0050	0.00
45	0.00109	0.00075	0.0050	0.00
46	0.00114	0.00080	0.0050	0.00
47	0.00119	0.00084	0.0050	0.00
48	0.00124	0.00091	0.0050	0.00
49	0.00130	0.00098	0.0050	0.00
50	0.00136	0.00109	0.0130	0.00
51	0.00152	0.00124	0.0130	0.00
52	0.00161	0.00142	0.0130	0.00
53	0.00176	0.00163	0.0130	0.00
54	0.00193	0.00189	0.0130	0.00
55	0.00224	0.00222	0.0175	0.80
56	0.00267	0.00266	0.0175	0.80
57	0.00306	0.00307	0.0225	0.80
58	0.00352	0.00346	0.0225	0.80
59	0.00397	0.00392	0.0150	0.60
60	0.00451	0.00446	0.0050	0.50
61	0.00526	0.00513	0.0050	0.25
62	0.00600	0.00587	0.0050	0.25
63	0.00704	0.00675	0.0050	0.25
64	0.00793	0.00760	0.0010	0.25
65	0.00895	0.00856	0.0010	0.15
66	0.01039	0.00966	0.0010	0.15
67	0.01159	0.01073	0.0010	0.30
68	0.01256	0.01186	0.0010	0.45
69	0.01392	0.01311	0.0010	0.20
70	0.01522	0.01477	0.0010	0.20
71	0.01684	0.01598	0.0010	0.20
72	0.01870	0.01778	0.0010	0.20
73	0.02083	0.01927	0.0010	0.20
74	0.02323	0.02136	0.0010	0.20

DUR	TERMINATION RATES	SALARY INCREASE
0	0.100	0.055
1	0.090	0.055
2	0.080	0.055
3	0.070	0.055
4	0.060	0.055
5	0.050	0.055
6	0.050	0.055
7	0.045	0.055
8	0.045	0.055
9	0.045	0.055
10	0.045	0.055
11	0.045	0.045
12	0.040	0.045
13	0.030	0.045
14	0.030	0.045
15	0.030	0.045
16	0.050	0.050
17	0.050	0.050
18	0.050	0.050
19	0.030	0.040
20	0.040	0.040
21	0.040	0.040
22	0.040	0.040
23	0.040	0.040
24	0.040	0.040
25	0.040	0.040
26	0.040	0.040
27	0.040	0.040
28	0.040	0.040
29	0.040	0.040
30	0.040	0.040
31	0.040	0.040
32	0.040	0.040
33	0.040	0.040
34	0.040	0.040
35	0.040	0.040
36	0.040	0.040
37	0.040	0.040
38	0.040	0.040
39	0.040	0.040
40	0.040	0.040
41	0.040	0.040
42	0.040	0.040
43	0.040	0.040
44	0.040	0.040
45	0.040	0.040
46	0.040	0.040
47	0.040	0.040
48	0.040	0.040
49	0.040	0.040
50	0.040	0.040
51	0.040	0.040
52	0.040	0.040
53	0.040	0.040
54	0.040	0.040
55	0.040	0.040
56	0.040	0.040

Exhibit 7-A

AMORTIZATION OF UNFUNDED ACTUARIAL ACCRUED LIABILITY
June 30, 2013

Date	Description	Amtz. Method	Amtz. Period	Initial Liability	Years Remain	Remaining Balance	Mid-Year Payment
2013	OAB	Note 1	16	2,612,612,675	16	2,612,612,675	219,564,650
2013	EAAB	Note 2,3	27	4,064,252,065	27	4,064,252,065	291,113,415
2013	2009 Change in Liability	L	26	2,866,088,782	26	2,866,088,782	255,124,962
2013	2010 Change in Liability	L	27	1,119,279,127	27	1,119,279,127	98,492,054
2013	2011 Change in Liability	L	28	(172,122,180)	28	(172,122,180)	(14,987,193)
2013	2012 Change in Liability	L	29	124,707,329	29	124,707,329	10,754,196
2013	2013 Change in Liability	L	30	(248,560,781)	30	(248,560,781)	(21,245,543)
2013	2013 Assumption Change	L	30	871,681,891	30	871,681,891	74,506,345
2013	2013 Asset Val Meth Change	L	30	(25,686,598)	30	(25,686,598)	(2,195,542)
	Total Outstanding Balance					**$ 11,212,252,310**	**$ 911,127,344**
Employers Credit Balance							
2013	Contribution Variance	L	1	(10,341,689)	1	(10,341,689)	(10,747,398)
2013	Contribution Variance	L	2	66,729,412	2	66,729,412	36,007,220
2013	Contribution Variance	L	3	68,511,720	3	68,511,720	25,581,278
2013	Contribution Variance	Note 3	0	-	0	-	-
2013	Contribution Variance	L	5	11,400,601	5	11,400,601	2,747,566
	Total Credit Balance					**$ 136,300,044**	**$ 53,588,666**
	Total Unfunded Actuarial Accrued Liability					**$ 11,348,552,354**	**$ 964,716,010**

See Exhibit 7-D for notes and explanations.

Exhibit 7-B

AMORTIZATION OF UNFUNDED ACTUARIAL ACCRUED LIABILITY
June 30, 2014 - Projected

Date	Description	Amtz. Method	Amtz. Period	Initial Liability	Years Remain	Remaining Balance	Mid-Year Payment
2013	OAB		16	2,612,612,675	15	2,593,443,410	233,836,352
2013	EAAB		27	4,064,252,065	26	4,086,858,295	310,035,787
2013	2009 Change in Liability	L	26	2,866,088,782	25	2,830,242,246	255,124,962
2013	2010 Change in Liability	L	27	1,119,279,127	26	1,106,465,512	98,492,054
2013	2011 Change in Liability	L	28	(172,122,180)	27	(170,316,807)	(14,987,193)
2013	2012 Change in Liability	L	29	124,707,329	28	123,507,827	10,754,196
2013	2013 Change in Liability	L	30	(248,560,781)	29	(246,366,627)	(21,245,543)
2013	2013 Assumption Change	L	30	871,681,891	29	863,987,177	74,506,345
2013	2013 Asset Val Meth Change	L	30	(25,686,598)	29	(25,459,851)	(2,195,542)
	Total Outstanding Balance					**$ 11,162,361,182**	**$ 944,321,418**
Employers Credit Balance							
2013	2010 Contribution Variance	L	2	66,729,412	1	34,647,964	36,007,220
2013	2011 Contribution Variance	L	3	68,511,720	2	47,407,814	25,581,278
2013	2012 Contribution Variance	Note 3	0	-	0	-	-
2013	2013 Contribution Variance	L	5	11,400,601	4	9,457,295	2,747,566
2014	2014 Contribution Variance	L	5	13,261,033	5	13,261,033	3,195,933
	Total Credit Balance					**$ 104,774,106**	**$ 67,531,997**
	Total Unfunded Actuarial Accrued Liability					**$ 11,267,135,288**	**$ 1,011,853,415**

See Exhibit 7-D for notes and explanations.

Exhibit 7-C

UAL Outstanding Balance and Payment Schedule
Based on June 30, 2013 UAL Schedules

FY Beginning	UAL Outstanding Balance (Millions)	UAL Mid-Year Payments (Millions)	Payment % Change	FY Beginning	UAL Outstanding Balance (Millions)	UAL Mid-Year Payments (Millions)	Payment % Change
2013	11,349	965		2028	6,358	1,126	0.6%
2014	11,267	1,012	4.9%	2029	5,697	775	-31.2%
2015	11,117	1,011	-0.1%	2030	5,347	775	0.0%
2016	10,955	1,023	1.2%	2031	4,970	775	0.0%
2017	10,768	1,063	3.9%	2032	4,562	775	0.0%
2018	10,525	1,066	0.3%	2033	4,121	775	0.0%
2019	10,259	1,069	0.2%	2034	3,646	775	0.0%
2020	9,969	1,075	0.5%	2035	3,132	775	0.0%
2021	9,649	1,081	0.6%	2036	2,577	775	0.0%
2022	9,298	1,087	0.6%	2037	1,978	775	0.0%
2023	8,913	1,093	0.6%	2038	1,331	775	0.0%
2024	8,490	1,099	0.6%	2039	632	520	-32.9%
2025	8,026	1,106	0.6%	2040	142	47	-91.0%
2026	7,519	1,113	0.6%	2041	105	62	32.0%
2027	6,964	1,119	0.6%	2042	49	51	-17.4%
				2043	0	0	0.0%

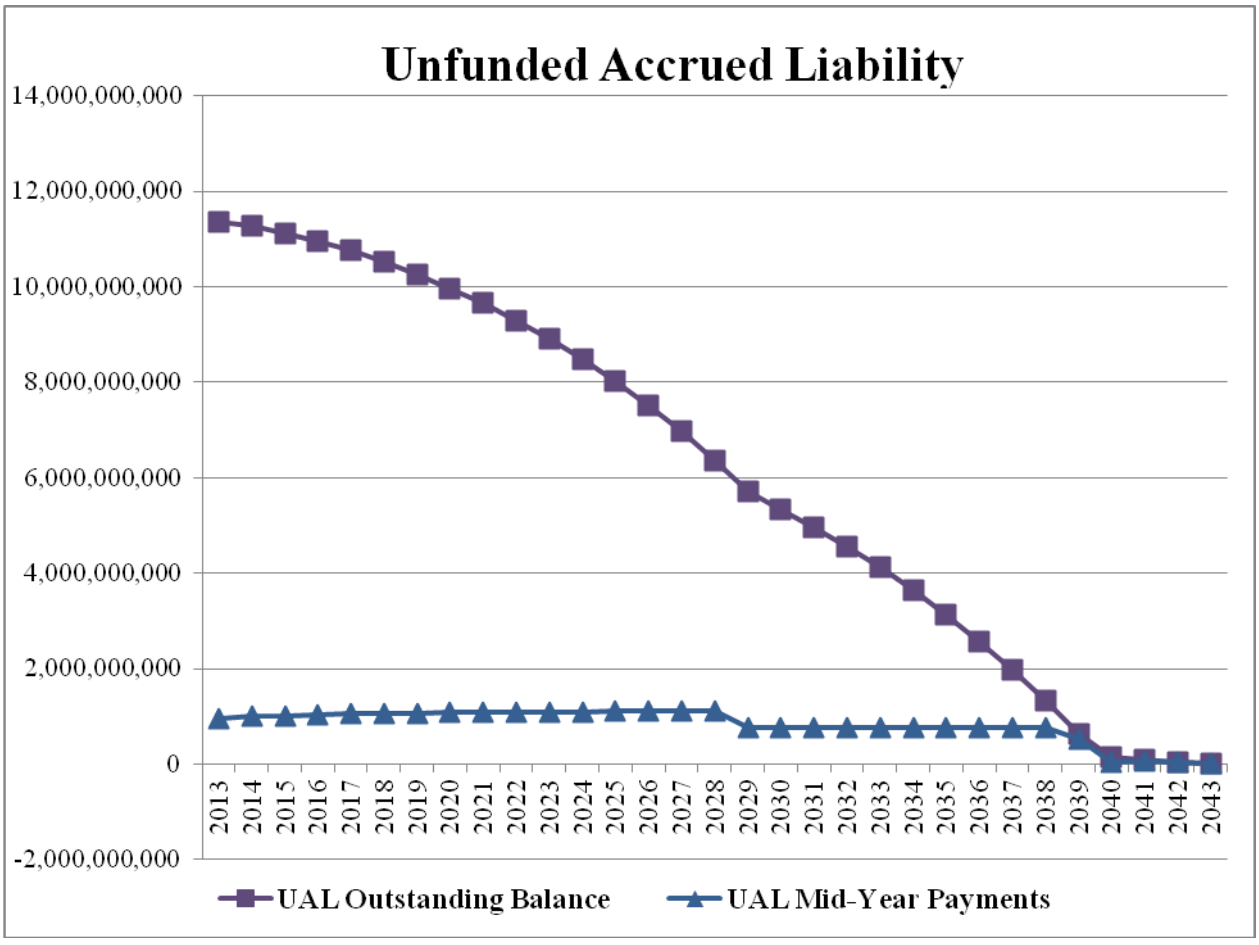


Exhibit 7-D

Amortization Schedule Notes

Act 497 of 2009 consolidated all schedules established prior to 2009 into two amortization schedules, the Original Amortization Base (OAB) and the Experience Account Amortization Base (EAAB). The OAB consists of the outstanding balance of the Initial Unfunded Accrued Liability and schedules with negative outstanding balances. The outstanding balance of this schedule was credited with funds from the Initial UAL account, excluding the subaccount of this fund, and the balance of the Employer Credit Account. The OAB payment schedule is prescribed by statute, as described in Note 1 below. The EAAB consists of the 2004 schedule and all remaining schedules. The outstanding balance of this schedule was credited with the balance of funds from the Initial UAL subaccount, which were transferred from the Employee Experience Account on June 30, 2009. The EAAB payment schedule is prescribed by statute, as described in Note 2 below.

Act 497 also revised the provisions regarding amortization of contribution variances. Previously, any contribution variance relative to the actuarially required contribution was amortized with level payments for five years. The Act provides that in any year from plan year 2009/2010 through 2039/2040 that the system receives an overpayment of contributions, the surplus will be credited to the EAAB. The EAAB will then be re-amortized according to the payment schedule specified by the Act. Similarly, any overpayment resulting from the statutory minimum contribution of 15.5% exceeding the actuarially calculated contribution until plan year 2039/2040 will be credited to the EAAB and the EAAB will be re-amortized.

All schedules were re-amortized, effective July, 1, 2013, using a rate of 8.00%.

Note 1: Act 497 of 2009 created the Original Amortization Base, effective July 1, 2010, which combines the following schedules shown in Exhibit A-1: 1993 (Initial Liability) 1993 (Change in Liability), 1994 - 1996, 1998-2000, 2005-2008. The combined balance was reduced by applying funds from the IUAL Fund, excluding the subaccount of this fund. The OAB was reduced by $100 Million on June 30, 2013 and re-amortized. Annual payments were determined a discount rate of 8.00%. Future payments will increase by 6.5% for 4 years, then by 2.0% until paid off in 2029.

Note 2: Act 497 of 2009 created the Experience Account Amortization Base, which combines the following schedules shown in Exhibit A-1: 1997, 2001 – 2003, 2004 (the liability resulting from Act 588 of 2004 which zeroed out the Experience Account), and 2008. The combined balance was reduced by applying funds from the subaccount of the IUAL Fund, which were transferred from the Experience Account on June 30, 2009. The EAAB was reduced by $100 Million on June 30, 2013 and re-amortized. Annual payments were determined a discount rate of 8.00%. Future payments will increase by 6.5% for 4 years, then will be level until paid off in 2040.

Note 3: The 2012 contribution variance surplus of $7,169,301 was used to reduce and re-amortize the EAAB, per Act 497 of 2009.

Exhibit 7-E

Components of Original Amortization Base
(Dollar amounts in millions)

	Annual Outstanding Balance					Annual Payments				
	IUAL	Other Schedules	IUAL Acct	Employer Credit Account	Total OAB	IUAL	Other Schedules	IUAL Acct	Employer Credit Account	Total OAB
2013	6,789.4	(3,681.6)	(395.9)	(99.2)	2,612.6	570.6	(309.4)	(33.3)	(8.3)	219.6
2014	6,739.6	(3,654.6)	(393.0)	(98.5)	2,593.4	607.7	(329.5)	(35.4)	(8.9)	233.8
2015	6,647.2	(3,604.5)	(387.6)	(97.2)	2,557.9	647.2	(350.9)	(37.7)	(9.5)	249.0
2016	6,506.4	(3,528.2)	(379.4)	(95.1)	2,503.7	689.2	(373.7)	(40.2)	(10.1)	265.2
2017	6,310.7	(3,422.0)	(368.0)	(92.2)	2,428.4	734.0	(398.0)	(42.8)	(10.7)	282.5
2018	6,052.7	(3,282.1)	(353.0)	(88.5)	2,329.1	748.7	(406.0)	(43.7)	(10.9)	288.1
2019	5,758.8	(3,122.8)	(335.8)	(84.2)	2,216.1	763.7	(414.1)	(44.5)	(11.2)	293.9
2020	5,425.9	(2,942.2)	(316.4)	(79.3)	2,087.9	779.0	(422.4)	(45.4)	(11.4)	299.8
2021	5,050.4	(2,738.6)	(294.5)	(73.8)	1,943.5	794.5	(430.8)	(46.3)	(11.6)	305.7
2022	4,628.8	(2,510.0)	(269.9)	(67.7)	1,781.2	810.4	(439.5)	(47.3)	(11.8)	311.9
2023	4,156.8	(2,254.1)	(242.4)	(60.8)	1,599.6	826.6	(448.3)	(48.2)	(12.1)	318.1
2024	3,630.3	(1,968.6)	(211.7)	(53.1)	1,397.0	843.2	(457.2)	(49.2)	(12.3)	324.5
2025	3,044.5	(1,650.9)	(177.5)	(44.5)	1,171.6	860.0	(466.4)	(50.2)	(12.6)	330.9
2026	2,394.3	(1,298.3)	(139.6)	(35.0)	921.3	877.2	(475.7)	(51.2)	(12.8)	337.6
2027	1,674.2	(907.8)	(97.6)	(24.5)	644.2	894.8	(485.2)	(52.2)	(13.1)	344.3
2028	878.2	(476.2)	(51.2)	(12.8)	337.9	912.7	(494.9)	(53.2)	(13.3)	351.2
2029	-	-	-	-	-	-	-	-	-	-

This table has changed from previously published tables. Previous annual payments were determined using the prior discount rate of 8.25%. The Outstanding balance of the OAB was reduced by $100 Million on June 30, 2013 and re-amortized, according to Act 497 of 2010. All re-amortized payments were based on the 8.00% discount rate.

GLOSSARY

Accrued Benefit – The pension benefit that an individual has earned as of a specific date based on the provisions of the plan and the individual's age, service, and salary as of that date.

Actuarial Accrued Liability – Computed differently under different funding methods, the actuarial accrued liability generally represents the portion of the actuarial present value of benefits attributable to service credit earned (or accrued) as of the valuation date.

Actuarial Present Value of Benefits – Amount which, together with future interest, is expected to be sufficient to pay all benefits to be paid in the future, regardless of when earned, as determined by the application of a particular set of actuarial assumptions; equivalent to the actuarial accrued liability plus the present value of future normal costs attributable to the members.

Actuarial Assumptions – Assumptions as to the occurrence of future events affecting pension costs. These assumptions include rates of investment earnings, changes in compensation, rates of mortality, withdrawal, disablement, and retirement as well as statistics related to marriage and family composition.

Actuarial Cost Method – A method of determining the portion of the cost of a pension plan to be allocated to each year; sometimes referred to as the "actuarial funding method." Each cost method allocates a certain portion of the actuarial present value of benefits between the actuarial accrued liability and future normal costs.

Actuarial Equivalence – Series of payments with equal actuarial present values on a given date when valued using the same set of actuarial assumptions.

Actuarial Present Value - The amount of funds required as of a specified date to provide a payment or series of payments in the future. It is determined by discounting future payments at predetermined rates of interest, and by probabilities of payments between the specified date and the expected date of payment.

Actuarial Value of Assets – The value of cash, investments, and other property belonging to the pension plan as used by the actuary for the purpose of the actuarial valuation. This may correspond to market value of assets, or some modification using an asset valuation method to reduce the volatility of asset values.

Actuarially Reduced – The method of adjusting a benefit received at an early date , or paid in a form other than the lifetime of the member so that the expected total cost to the retirement system is equivalent to the cost if the benefit did not begin until later, or was paid for the lifetime of the member.

Asset Gain (Loss) – That portion of the actuarial gain attributable to investment performance above (below) the expected rate of return in the actuarial assumptions.

Amortization – Paying off an interest-discounted amount with periodic payments of interest and (generally) principal, as opposed to paying off with a lump sum payment.

Amortization Payment – That portion of the pension plan contribution designated to pay interest and reduce the outstanding principal balance of unfunded actuarial accrued liability. If the amortization payment is less than the accrued interest on the unfunded actuarial accrued liability the outstanding principal balance will increase.

Contribution Variance – The difference between actuarially required contribution and the actual amount received based upon a projected contribution rate. Results in an increase or decrease to future required contributions.

Discount Rate – The interest rate used in developing present values to reflect the time value of money.

Decrements – Events which result in the termination of membership in the system such as retirement, disability, withdrawal, or death.

Employer Normal Cost – Portion of the normal cost, excluding administrative expenses, not paid by employee contributions.

Experience Gain (Loss) – The difference between actual unfunded actuarial accrued liabilities and anticipated unfunded actuarial accrued liabilities during the period between two valuation dates. It is a measurement of the difference between actual and expected experience, and may be related to investment earnings above (or below) those expected or changes in the liability due to fewer (or greater) than expected numbers of retirements, deaths, disabilities, or withdrawals, or variances in pay increases relative to assumed pay increases. The effect of such gains (or losses) is to decrease (or increase) future costs.

Funded Ratio – A measure of the ratio of the actuarial value of assets to liabilities of the system. Typically the assets used in the measure are the actuarial value of assets as determined by the asset valuation method adopted by the Board of Trustees; the liabilities are determined using the actuarial funding method specified by statute. Thus the funded ratio depends not only on the financial strength of the plan but also on the asset valuation method used to determine the assets and on the funding method used to determine the liabilities.

Governmental Accounting Standards Board (GASB) – Governmental agency that sets the accounting standards for state and local government operations.

Market Value of Assets (MVA) – The value of assets as they would trade on an open market.

Normal Cost – Computed differently under different funding methods, generally that portion of the actuarial present value of benefits allocated to the current plan year.

Projected Benefits – The benefits expected to be paid in the future based on the provisions of the plan and the actuarial assumptions. The projected values are based on anticipated future advancement in age and accrual of service as well as increases in salary paid to the participant.

Projected Unit Credit (PUC) Funding Method – A standard actuarial funding method whereby the annual cost of benefits is comprised of two components: normal cost plus an amortization payment to reduce the unfunded actuarial accrued liability.

Side-Fund Assets – Assets held in the trust for purposes other than for paying the accrued benefits or administrative expenses of the plan.

Unfunded Actuarial Accrued Liability (UAAL or UAL) – The excess of the actuarial accrued liability over the valuation assets; sometimes referred to as "unfunded past service liability". UAL increases each time an actuarial loss occurs and when new benefits are added without being fully funded initially and decreases when actuarial gains occur.

Valuation Assets – The actuarial value of assets less side-fund assets; represents the portion of the actuarial value of assets available to pay the accrued benefits of the plan.

Vested Benefit – Benefits that the members are entitled to regardless of employment status.

STATE OF ILLINOIS
DEPARTMENT OF INSURANCE

ACTUARIAL EXPERIENCE STUDY
September 26, 2012

September 26, 2012

Travis March
Deputy Director – Public Pensions
Department of Insurance
320 W. Washington, Room 575
Springfield, IL 62767

Re: Final Actuarial Experience Study

Dear Travis:

As requested, we have performed an actuarial experience study to review certain economic and demographic assumptions that are currently being used for purposes of valuing Pension Funds regulated by Article 3 (Police Officers) and Article 4 (Firefighters) of the Illinois Pension Code.

In the course of the analysis, we compiled experience for the numerous (650+) Funds valued by the Department of Insurance for the years 2004 through 2011. While we cannot verify the accuracy of all the information provided, the supplied information was reviewed for consistency and reasonableness. As a result of this review, we have no reason to doubt the substantial accuracy of the information and believe it has produced appropriate results.

The purpose of this study is to review the current economic and demographic actuarial assumptions to determine which changes, if any, are necessary in order to achieve the objective of developing costs that are stable, predictable, and represent our best estimate of anticipated future experience. It is important to remember that the ultimate cost of any Pension Fund is independent of the actuarial assumptions used during the valuation process. Ultimately, the cost will be the sum of the benefits paid from the Fund and the administrative expenses incurred, less any net investment gains received.

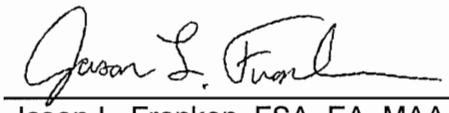
The specific assumptions investigated throughout the remainder of this study are as follows:

- Retirement Rates
- Withdrawal Rates
- Mortality Rates
- Disability Rates
- Investment Return
- Salary Increases
- Payroll Growth Rate
- Tier 2 Cost-of-Living Adjustment

The balance of this Report presents details of the experience analysis. The undersigned looks forward to meeting with the Department of Insurance in order to discuss the Report and answer any pending questions concerning its contents.

Respectfully submitted,

FOSTER & FOSTER INC.

By: 

Jason L. Franken, FSA, EA, MAAA

ACTUARIAL STANDARDS OF PRACTICE

Background

The Actuarial Standards Board has provided coordinated guidance through of a series of Actuarial Standards of Practice (ASOP) for measuring pension obligations and determining pension plan costs or contributions. The ASOPs that apply specifically to valuing pensions are as follows:

- ASOP No. 4, *Measuring Pension Obligations and Determining Pension Plan Costs or Contributions*, which ties together the standards shown below, provides guidance on actuarial cost methods, and addresses overall considerations for measuring pension obligations and determining plan costs or contributions
- ASOP No. 27, *Selection of Economic Assumptions for Measuring Pension Obligations*
- ASOP No. 35, *Selection of Demographic and Other Noneconomic Assumptions for Measuring Pension Obligations*
- ASOP No. 44, *Selection and Use of Asset Valuation Methods for Pension Valuations*

Please note that the contents displayed throughout the remainder of this report are in compliance and consistent with the above mentioned Actuarial Standards of Practice. When applicable, further details of the ASOP associated with the reviewed actuarial assumption will be provided in the experience analysis, which is the basis for the remainder of the report.

Additional Required Communications

Please keep in mind that future actuarial measurements may differ significantly from current measurements 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 (such as the end of an amortization period)
- Changes in plan provisions or applicable law

The data used for purposes of this report was compiled from the Pension Annual Statement System under the direction of the Illinois Department of Insurance.

EXPERIENCE REVIEW SUMMARY

Foster & Foster performed an experience study on valuation data for the years 2004 through 2011. The purpose of this study is to update the assumptions used by the Department of Insurance in its valuation of the Article 3 and Article 4 Pension Funds in the State of Illinois. Below is a summary of our key findings and proposed changes. The remainder of the document outlines our analysis and documents our recommendations.

- **Retirement Rates**: The retirement rates determine the age at which members who are eligible for normal retirement commence payments. In general, members have retired later than anticipated by the old assumption. We recommend the rates for the both the police and fire plans be updated to better reflect the later retirements that have occurred since 2004.

- **Withdrawal Rates**: We recommend a slight change to the withdrawal rates to reflect experience since 2004. The old table understates withdrawal at the early ages and overstates it in the later ages.

- **Mortality Rates**: In prior valuations, the 1971 Group Annuity Mortality table has been used to determine the liabilities for Article 3 and Article 4 pension funds. We recommend a change to the RP 2000 Combined Healthy Mortality table, with Blue Collar Adjustment for healthy lives and the RP 2000 Disabled Retiree Mortality Table for disabled lives. The experience since 2004 suggests that changing to the RP 2000 Blue Collar table is reflective of the actual experience. At this point, we do not believe an adjustment to the table for future mortality improvements is necessary. We will monitor the experience over the next few years and adjust the table as needed.

- **Disability Rates**: We recommend a change in the disability rates to reflect experience since 2004. The disability incidence was significantly higher than previously assumed. Additionally, based on historical experience, we will assume that 70% of police disabilities and 90% of fire disabilities are service-related. As a result, a majority of disabled members will be entitled to the more generous disability benefits.

- **Investment Return**: Article 3 and Article 4 plans are subject to varying levels of investment restrictions. For example, a plan with less than $2.5 million can only invest up to 10% in equities while a plan with more than $10 million can invest up to at least 55% in equities. As a result, the best-estimate of the future investment returns varies dramatically from plan to plan. We do not believe it is appropriate to have a single investment return assumption for every plan. We recommend implementing a four tier assumption based on a plan's asset level. After consulting investment professionals, we believe that an assumption of 5.00% for the smallest plans increasing to 6.75% for the largest plans provides a best-estimate assumption for all plans.

- **Salary Increases:** Historically, the salary increase assumption has been a flat 5.5% for all active members. Based on our analysis, we recommend changing the assumption to be based upon service. The salary increases begin as high as 12% in a member's early years and grades to 4% over the course of a career. This approach more accurately reflects the increases a member will receive over his career.

- **Payroll Growth Rate**: We recommend the implementation of an explicit payroll growth assumption of 4.5%. Previously, the payroll growth assumption was assumed to be the same as the salary scale (i.e., 5.5%). This overstates the historical growth in payroll for police and fire departments across Illinois and defers a disproportionate share of the amortization payments to future generations of taxpayers.

- **Tier 2 Cost-of-Living Adjustment**: With the introduction of Tier 2 benefits for individuals first becoming a member in an Article 3 or Article 4 fund on or after January 1, 2011, a new assumption is required to estimate the future cost-of-living an adjustment for these members. The Tier 2 COLA is defined as the lesser of 3.0% or one-half of the annual unadjusted percentage increase in the Consumer Price Index-U for the 12 months ending with the September proceeding each November 1. Additionally, this rate will be used to project the maximum annual salary cap ($106,800 in 2011). We recommend a rate of 1.25% for both purposes.

EXPERIENCE ANALYSIS

Demographic Assumptions

ASOP No. 35, *Selection of Demographic and Other Noneconomic Assumptions for Measuring Pension Obligations*, provides guidance to actuaries in selecting (including giving advice on selecting) demographic and other noneconomic assumptions for measuring obligations under defined benefit pension plans.

Over the following pages, the following demographic assumptions will be reviewed:

- Retirement Rates
- Withdrawal Rates
- Mortality Rates
- Disability Rates

Generally, demographic assumptions are based on actual plan experience with additional considerations for current trends. ASOP No. 35 states "the actuary should use professional judgment to estimate possible future outcomes based on past experience and future expectations, and select assumptions based upon application of that professional judgment." ASOP No. 35 also states that "a reasonable assumption is one that is expected to appropriately model the contingency being measured and is not anticipated to produce significant cumulative actuarial gains or losses…the actuary should not give undue weight to past experience when selecting demographic assumptions."

Demographic assumptions generally remain consistent over time, absent significant changes in plan provisions. Therefore, the best true indicator of future experience is past experience. For each assumption, the study compares actual experience for that time period to assumptions used in the valuations.

Note that actuarial assumptions reflect average experience over long periods of time. A change in actuarial assumptions generally results when experience over a period of years indicates a consistent pattern. Proposed changes to the demographic assumptions better reflect actual Fund experience over the studied time period. The proposed changes also meet the objective of developing costs that are stable, predictable, and represent our best estimate of anticipated future experience.

Retirement Rates

Overview

A retirement rate is the associated probability at a specific point in time that a Member will retire, given that they have attained the eligibility requirements for retirement. The associated cost due to retirement experience is determined by the age at which Members actually retire. Higher rates of retirement at earlier ages generally results in higher costs to the plans.

The current requirements for Normal Retirement eligibility according to the Illinois Pension Code are as follows:

1. Members hired prior to 1/1/2011 (Tier 1): Age 50 with completion of 20 years of service
2. Member hired on and after 1/1/2011 (Tier 2): Age 55 with completion of 10 years of service

Current Assumption

The current retirement rate assumption for the Article 3 and Article 4 pension plans reflects an age-based formula: a 40% probability of retirement at age 50 and linear progression from 5.3% for age 51 and continuing until the 100% retirement assumption at age 69.

Experience

The charts and graphs on the following pages illustrate the relationship between actual retirement experience over the last six years and expected experience based on the current assumption. Experience was determined separately for the Police Funds and for the Fire Funds. The "Eligible Members" column sums the total number of Members eligible to retire at each age for each year of experience.

When comparing these assumptions to the actual experience shown on the following graphs, it is evident that the actual retirement rate for Members at age 50 is far lower than the current assumption. Additionally, the probabilities of retirement are relatively stable for ages 50-54 and then begin to slowly increase from that point as the Members get older.

- Table 1: Retirement Experience – Police Funds
- Graph 1: Retirement Experience – Police Funds
- Table 2: Retirement Experience – Fire Funds
- Graph 2: Retirement Experience – Fire Funds

Proposed Assumption

We are recommending changes to the assumed retirement rates for both the Police and Fire Funds which will more closely resemble the actual experience realized over the studied time period. Note that Tier 2 retirement rates shall not begin until age 55 because of the new eligibility requirement for Tier 2 members. However, we recommend using the same probabilities of retirement at the respective ages as proposed on the following charts. Generally, the proposed rates reflect reductions in assumed probabilities for all ages and provide for more stable retirement probabilities at each age.

An illustration of the expected retirements using the proposed rates is included in the graphs listed above.

The proposed rates represent a better model for the actual retirement experience and therefore shall be an improved predictor of future retirement experience.

Illinois Department of Insurance

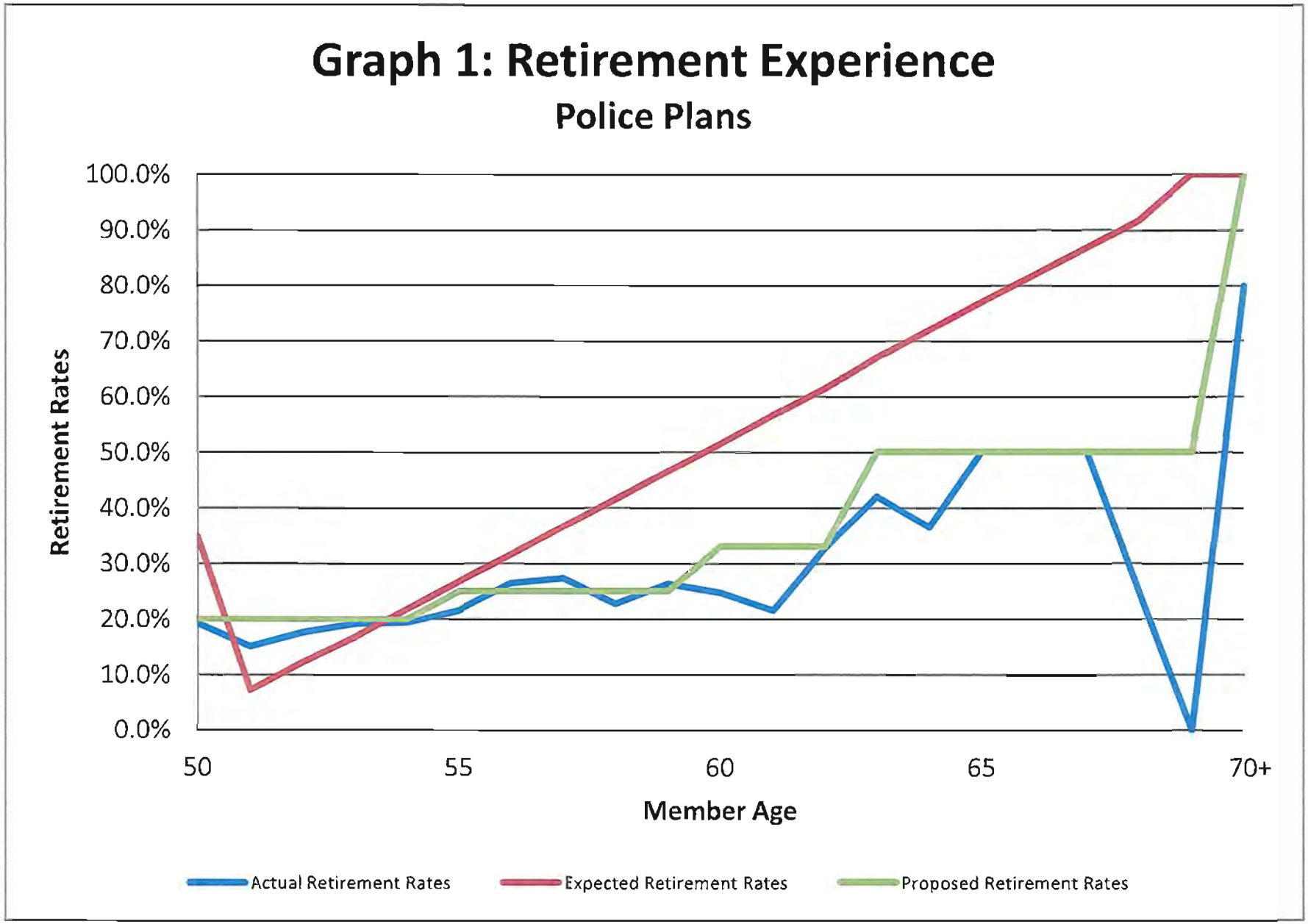
Public Pension Division - Police Plans

Table 1 - Retirement Experience - Police*

Age	Eligible Members	Actual Retirements	Expected Retirements	Actual Retirement Rates	Expected Retirement Rates	Proposed Retirement Rates
50	1,380	265	480	19.2%	34.8%	20.0%
51	1,204	182	88	15.1%	7.3%	20.0%
52	1,074	189	132	17.6%	12.3%	20.0%
53	935	179	157	19.1%	16.8%	20.0%
54	769	149	168	19.4%	21.9%	20.0%
55	643	139	172	21.6%	26.7%	25.0%
56	545	144	172	26.4%	31.5%	25.0%
57	406	111	149	27.3%	36.6%	25.0%
58	299	68	124	22.7%	41.5%	25.0%
59	213	56	99	26.3%	46.5%	25.0%
60	190	47	98	24.7%	51.4%	33.0%
61	139	30	79	21.6%	56.6%	33.0%
62	113	37	69	32.7%	61.4%	33.0%
63	69	29	46	42.0%	67.0%	50.0%
64	41	15	30	36.6%	72.0%	50.0%
65	24	12	18	50.0%	77.0%	50.0%
66	12	6	10	50.0%	81.9%	50.0%
67	6	3	5	50.0%	86.8%	50.0%
68	4	1	4	25.0%	91.8%	50.0%
69	3	0	3	0.0%	100.0%	50.0%
70+	5	4	5	80.0%	100.0%	100.0%
Total**	**8,074**	**1,666**	**2,108**	**20.6%**	**26.1%**	**22.7%**

*Data from Valuation Year 2004 through 2010 sorted by Member Age.

**Total rates are based on the number of incidences divided by the number of exposures and do not represent an average of the numbers above.


Graph 1: Retirement Experience
Police Plans
Retirement Rates
100.0%
90.0%
80.0%
70.0%
60.0%
50.0%
40.0%
30.0%
20.0%
10.0%
0.0%
50
55
60
65
70+
Member Age
Actual Retirement Rates
Expected Retirement Rates
Proposed Retirement Rates

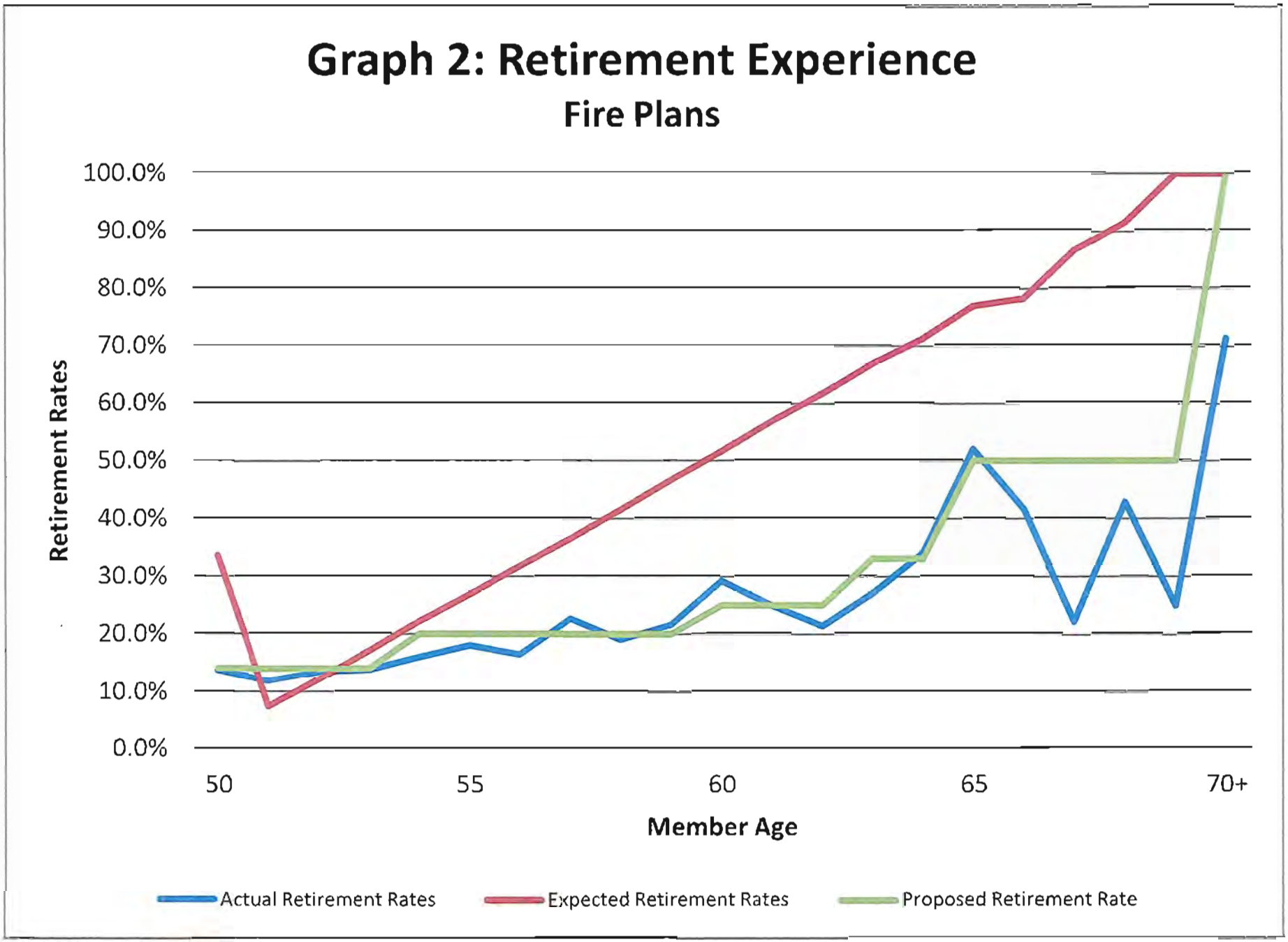
Illinois Department of Insurance

Public Pension Division - Fire Plans

Table 2 - Retirement Experience - Fire*

Age	Eligible Members	Actual Retirements	Expected Retirements	Actual Retirement Rates	Expected Retirement Rates	Proposed Retirement Rates
50	1,043	143	350	13.7%	33.6%	14.0%
51	951	113	71	11.9%	7.5%	14.0%
52	908	122	110	13.4%	12.1%	14.0%
53	862	119	148	13.8%	17.1%	14.0%
54	742	119	164	16.0%	22.2%	20.0%
55	625	113	168	18.1%	26.8%	20.0%
56	485	80	154	16.5%	31.8%	20.0%
57	383	87	140	22.7%	36.5%	20.0%
58	278	53	115	19.1%	41.5%	20.0%
59	199	43	93	21.6%	46.7%	20.0%
60	147	43	76	29.3%	51.6%	25.0%
61	100	25	57	25.0%	56.9%	25.0%
62	84	18	52	21.4%	61.7%	25.0%
63	70	19	47	27.1%	67.0%	33.0%
64	47	16	34	34.0%	71.3%	33.0%
65	25	13	19	52.0%	77.0%	50.0%
66	12	5	9	41.7%	78.3%	50.0%
67	9	2	8	22.2%	86.7%	50.0%
68	7	3	6	42.9%	91.6%	50.0%
69	4	1	4	25.0%	100.0%	50.0%
70+	7	5	7	71.4%	100.0%	100.0%
Total	**6,988**	**1,142**	**1,832**	**16.3%**	**26.2%**	**17.6%**

*Data from Valuation Year 2004 through 2010 sorted by Member Age.


Graph 2: Retirement Experience
Fire Plans
100.0%
90.0%
80.0%
70.0%
60.0%
50.0%
40.0%
30.0%
20.0%
10.0%
0.0%
Retirement Rates
50
55
60
65
70+
Member Age
Actual Retirement Rates
Expected Retirement Rates
Proposed Retirement Rate

Withdrawal Rates

Overview
The withdrawal rate, or termination rate, is the probability that a Member will separate employment from a cause other than disability, death, or retirement. This includes members who terminate and receive a refund of contributions.

Current Assumption
The current withdrawal assumption is based on age, with no rates assumed beyond age 49. The table reflects higher withdrawal rates for younger Members.

Experience
The following charts compare actual termination experience to the current assumption. For younger, shorter service Members, actual termination rates exceeded the expected rates. However, for older, longer service members, actual termination rates were less than the expected rates.

Note that because a Tier 1 Member will not attain Normal Retirement eligibility until 20 years of service, any Member hired after age 30 will have an earliest retirement age after age 50. The experience on the following pages shows that Members over age 50 do terminate employment prior to reaching Normal Retirement eligibility. This should be reflected in the withdrawal assumption.

- Table 3: Withdrawal Experience – Police Funds
- Graph 3: Withdrawal Experience – Police Funds
- Table 4: Withdrawal Experience – Fire Funds
- Graph 4: Withdrawal Experience – Fire Funds

Proposed Assumption
We are proposing higher termination rates for shorter service members and lower rates for higher service members. The changes apply to both the Police Funds and Fire Funds and are applicable for both Tier 1 and Tier 2 Members.

In addition, to properly reflect terminations after age 50, but before normal retirement eligibility, we believe it is necessary to extend the range of termination rates beyond age 49.

The proposed rates are detailed in the experience charts.

Illinois Department of Insurance

Public Pension Division - Police Plans

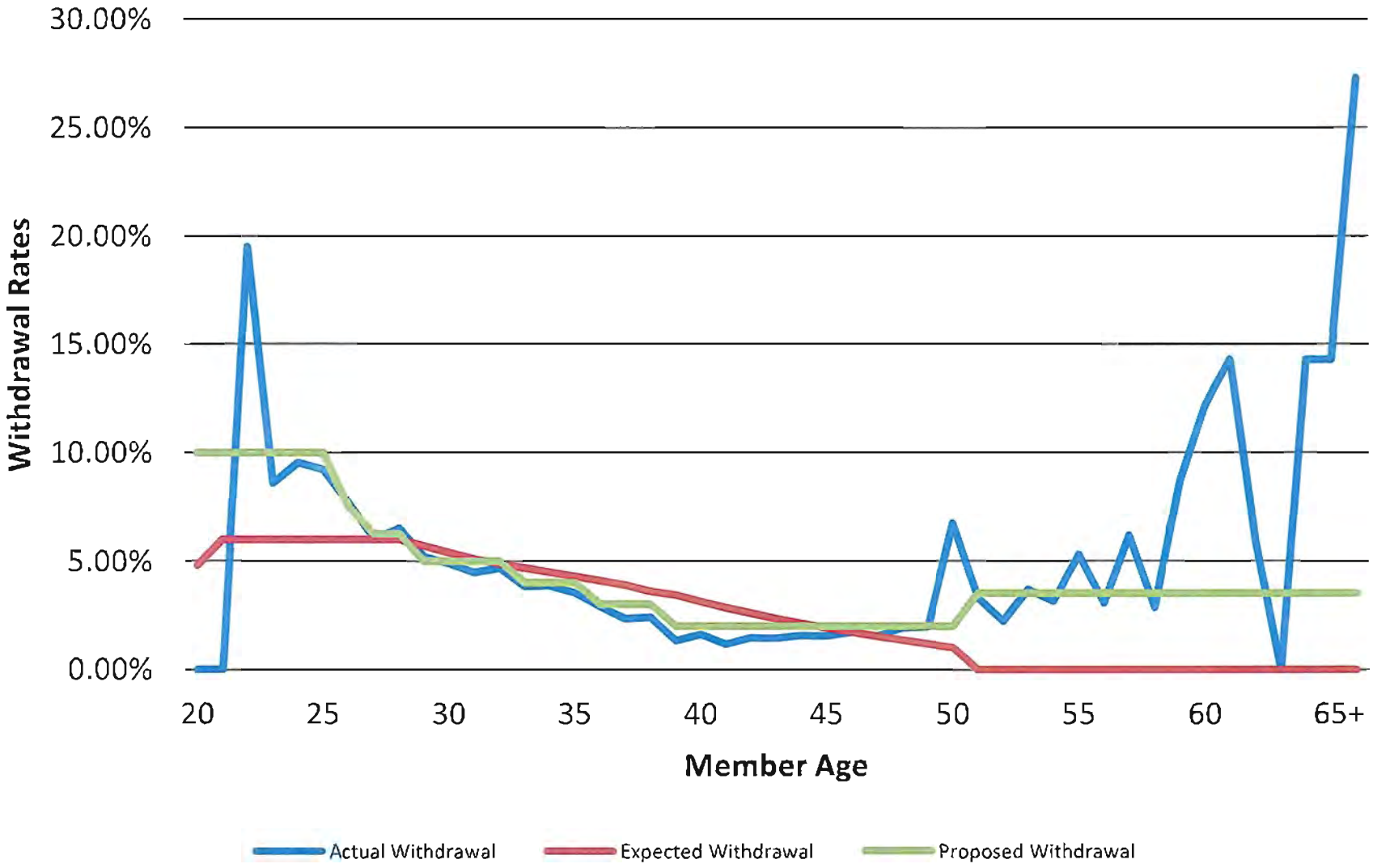
Table 3: Withdrawal Experience - Police*

Age	Exposures	Actual Terminations	Expected Terminations	Actual Withdrawal	Expected Withdrawal	Proposed Withdrawal
<20	5	0	0	0.00%	4.80%	10.00%
20	1	0	0	0.00%	6.00%	10.00%
21	41	8	2	19.51%	6.00%	10.00%
22	209	18	13	8.61%	6.00%	10.00%
23	712	68	43	9.55%	6.00%	10.00%
24	1,288	119	77	9.24%	6.00%	10.00%
25	1,717	132	103	7.69%	6.00%	7.50%
26	1,997	120	120	6.01%	6.00%	6.25%
27	2,258	147	135	6.51%	6.00%	6.25%
28	2,432	127	139	5.22%	5.70%	5.00%
29	2,551	125	138	4.90%	5.40%	5.00%
30	2,627	118	134	4.49%	5.10%	5.00%
31	2,768	130	136	4.70%	4.90%	5.00%
32	2,873	110	135	3.83%	4.70%	4.00%
33	3,115	120	140	3.85%	4.50%	4.00%
34	3,376	119	145	3.52%	4.30%	4.00%
35	3,492	101	143	2.89%	4.09%	3.00%
36	3,579	84	139	2.35%	3.89%	3.00%
37	3,573	86	128	2.41%	3.59%	3.00%
38	3,539	47	122	1.33%	3.43%	2.00%
39	3,319	54	104	1.63%	3.12%	2.00%
40	3,108	36	88	1.16%	2.84%	2.00%
41	2,999	44	78	1.47%	2.59%	2.00%
42	2,833	41	67	1.45%	2.35%	2.00%
43	2,595	41	55	1.58%	2.13%	2.00%
44	2,389	37	46	1.55%	1.93%	2.00%
45	2,256	39	39	1.73%	1.73%	2.00%
46	2,128	33	33	1.55%	1.54%	2.00%
47	2,026	39	28	1.93%	1.36%	2.00%
48	1,969	39	23	1.98%	1.19%	2.00%
49	1,994	134	20	6.72%	1.02%	2.00%
50	484	16	0	3.31%	0.00%	3.50%
51	402	9	0	2.24%	0.00%	3.50%
52	326	12	0	3.68%	0.00%	3.50%
53	254	8	0	3.15%	0.00%	3.50%
54	208	11	0	5.29%	0.00%	3.50%
55	163	5	0	3.07%	0.00%	3.50%
56	130	8	0	6.15%	0.00%	3.50%
57	105	3	0	2.86%	0.00%	3.50%
58	81	7	0	8.64%	0.00%	3.50%
59	66	8	0	12.12%	0.00%	3.50%
60	14	2	0	14.29%	0.00%	3.50%
61	17	1	0	5.88%	0.00%	3.50%
62	11	0	0	0.00%	0.00%	3.50%
63	7	1	0	14.29%	0.00%	3.50%
64	7	1	0	14.29%	0.00%	3.50%
65+	11	3	0	27.27%	0.00%	3.50%
Total	**72,055**	**2,411**	**2,573**	**3.35%**	**3.57%**	**3.52%**

*Data from Valuation Year 2004 through 2010 sorted by Member Age.

Graph 3: Withdrawal Experience

Police Plans



Illinois Department of Insurance

Public Pension Division - Fire Plans

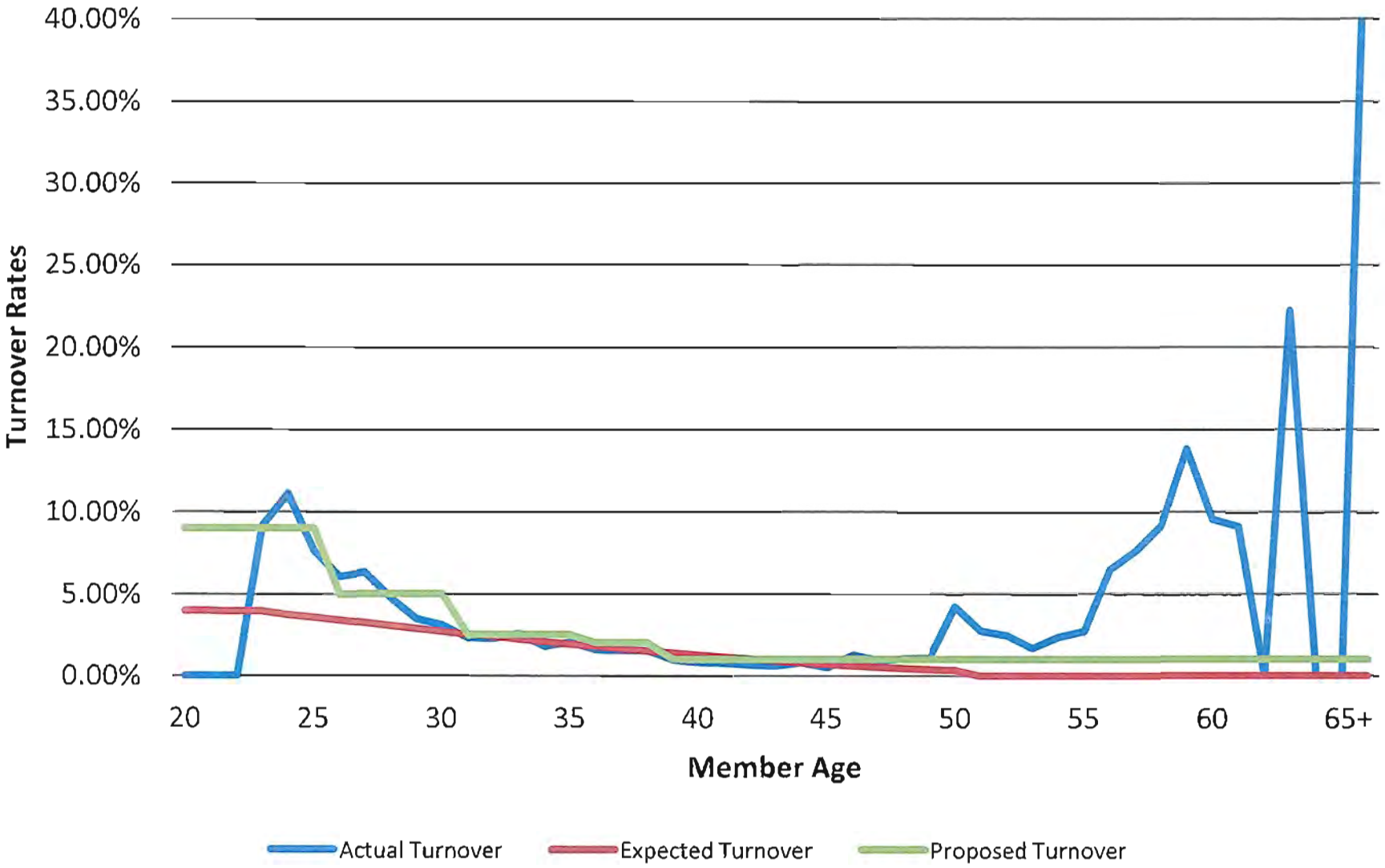
Table 4: Withdrawal Experience - Fire*

Age	Exposures	Actual Terminations	Expected Terminations	Actual Withdrawal	Expected Withdrawal	Proposed Withdrawal
<20	2	0	0	0.00%	4.02%	9.00%
20	4	0	0	0.00%	4.02%	9.00%
21	13	0	1	0.00%	3.98%	9.00%
22	131	12	5	9.16%	3.98%	9.00%
23	325	36	12	11.08%	3.77%	9.00%
24	550	42	20	7.64%	3.61%	9.00%
25	758	46	26	6.07%	3.44%	5.00%
26	965	61	32	6.32%	3.27%	5.00%
27	1,138	54	35	4.75%	3.08%	5.00%
28	1,321	46	38	3.48%	2.91%	5.00%
29	1,449	45	40	3.11%	2.73%	5.00%
30	1,549	36	40	2.32%	2.56%	2.50%
31	1,637	37	39	2.26%	2.40%	2.50%
32	1,727	44	39	2.55%	2.24%	2.50%
33	1,856	33	39	1.78%	2.08%	2.50%
34	1,965	40	38	2.04%	1.93%	2.50%
35	2,041	32	37	1.57%	1.79%	2.00%
36	2,077	32	34	1.54%	1.65%	2.00%
37	2,105	32	32	1.52%	1.52%	2.00%
38	2,085	20	29	0.96%	1.39%	1.00%
39	1,979	16	25	0.81%	1.26%	1.00%
40	1,939	15	22	0.77%	1.14%	1.00%
41	1,965	13	20	0.66%	1.02%	1.00%
42	1,968	12	18	0.61%	0.92%	1.00%
43	1,968	16	16	0.81%	0.81%	1.00%
44	1,947	10	14	0.51%	0.71%	1.00%
45	1,911	24	12	1.26%	0.62%	1.00%
46	1,861	17	10	0.91%	0.54%	1.00%
47	1,761	18	8	1.02%	0.47%	1.00%
48	1,713	18	7	1.05%	0.41%	1.00%
49	1,648	69	6	4.19%	0.35%	1.00%
50	512	14	0	2.73%	0.00%	1.00%
51	407	10	0	2.46%	0.00%	1.00%
52	301	5	0	1.66%	0.00%	1.00%
53	213	5	0	2.35%	0.00%	1.00%
54	148	4	0	2.70%	0.00%	1.00%
55	93	6	0	6.45%	0.00%	1.00%
56	53	4	0	7.55%	0.00%	1.00%
57	44	4	0	9.09%	0.00%	1.00%
58	29	4	0	13.79%	0.00%	1.00%
59	21	2	0	9.52%	0.00%	1.00%
60	11	1	0	9.09%	0.00%	1.00%
61	8	0	0	0.00%	0.00%	1.00%
62	9	2	0	22.22%	0.00%	1.00%
63	3	0	0	0.00%	0.00%	1.00%
64	2	0	0	0.00%	0.00%	1.00%
65+	2	1	0	50.00%	0.00%	1.00%
Total	**46,214**	**938**	**693**	**2.03%**	**1.50%**	**2.08%**

*Data from Valuation Year 2004 through 2010 sorted by Member Age.

Graph 4: Withdrawal Experience

Fire Plans



Mortality Rates

Overview

The rate of mortality is the probability of death at a given age. While mortality is a contingency for both the active and retiree populations, it has the greatest cost implications for retirees.

As mortality rates have continued to decline over time, concern has increased about the impact of potential future mortality improvement on the magnitude of pension commitments. ASOP No. 35 discusses the importance of actuaries considering mortality improvements when measuring pension obligations. Specifically, an actuary should adjust mortality rates to reflect mortality improvement prior to the measurement date and include an assumption regarding the expected mortality improvement after the measurement date, if reasonable.

Current Assumption

The current mortality assumption was established under the 1971 Group Annuity Mortality Table for Males and Females.

Experience

The charts and graphs listed below compare actual experience to expected experience using the current and proposed assumption tables. Experience was reviewed separately for retirees and active members and was reviewed for Police and Fire Funds in total to increase the credible experience.

- Table 5: Active Mortality Experience – 1971 GAM
- Graph 5: Active Mortality Experience – 1971 GAM
- Table 6: Active Mortality Experience – RP2000CH w/ BC Adj. (Proposed Table)
- Graph 6: Active Mortality Experience – RP2000CH w/ BC Adj. (Proposed Table)
- Table 7: Retiree Mortality Experience – 1971 GAM
- Graph 7: Retiree Mortality Experience – 1971 GAM
- Table 8: Retiree Mortality Experience – RP2000CH w/ BC Adj. (Proposed Table)
- Graph 8: Retiree Mortality Experience – RP2000CH w/ BC Adj. (Proposed Table)

For both retirees and active members, the results show there were fewer deaths than expected under the current assumption.

Proposed Assumption

The current mortality table is outdated and does not represent a reasonable prediction of future mortality rates at this point in time.

Retirees

Despite trends of mortality improvement among the general population, the retiree mortality experience examined for 2004 through 2010 indicates these trends have not materialized fully for the Police and Fire population. Therefore, we recommend updating the mortality assumption to the RP 2000 Combined Healthy Mortality table, with Blue Collar Adjustment.

This population has not experienced the same level of mortality improvements observed in the general population. As a result, we do not recommend projecting the table further to reflect additional improvement. Future experience will be monitored and the mortality assumption will be updated accordingly.

Actives
As for retirees, we recommend an update to the RP 2000 Combined Healthy Mortality Table with Blue Collar Adjustment. While this table assumes heavier rates of mortality than experienced historically, given the low rates on incidence actually experienced, it represents a reasonable estimate of anticipated experience.

Disableds
The experience for the disabled population is less credible than the general retiree population. Therefore, we propose using a disabled retiree mortality table that reflects more general trends in mortality experience. Since mortality for disabled populations is generally heavier than healthy populations, we propose use of the RP 2000 Disabled Retiree Mortality Table. While Article 3 and Article 4 have a broader definition of disability than what is considered under this table, we do not believe multiple mortality tables are needed for this group.

Illinois Department of Insurance

Public Pension Division - Police and Fire Plans

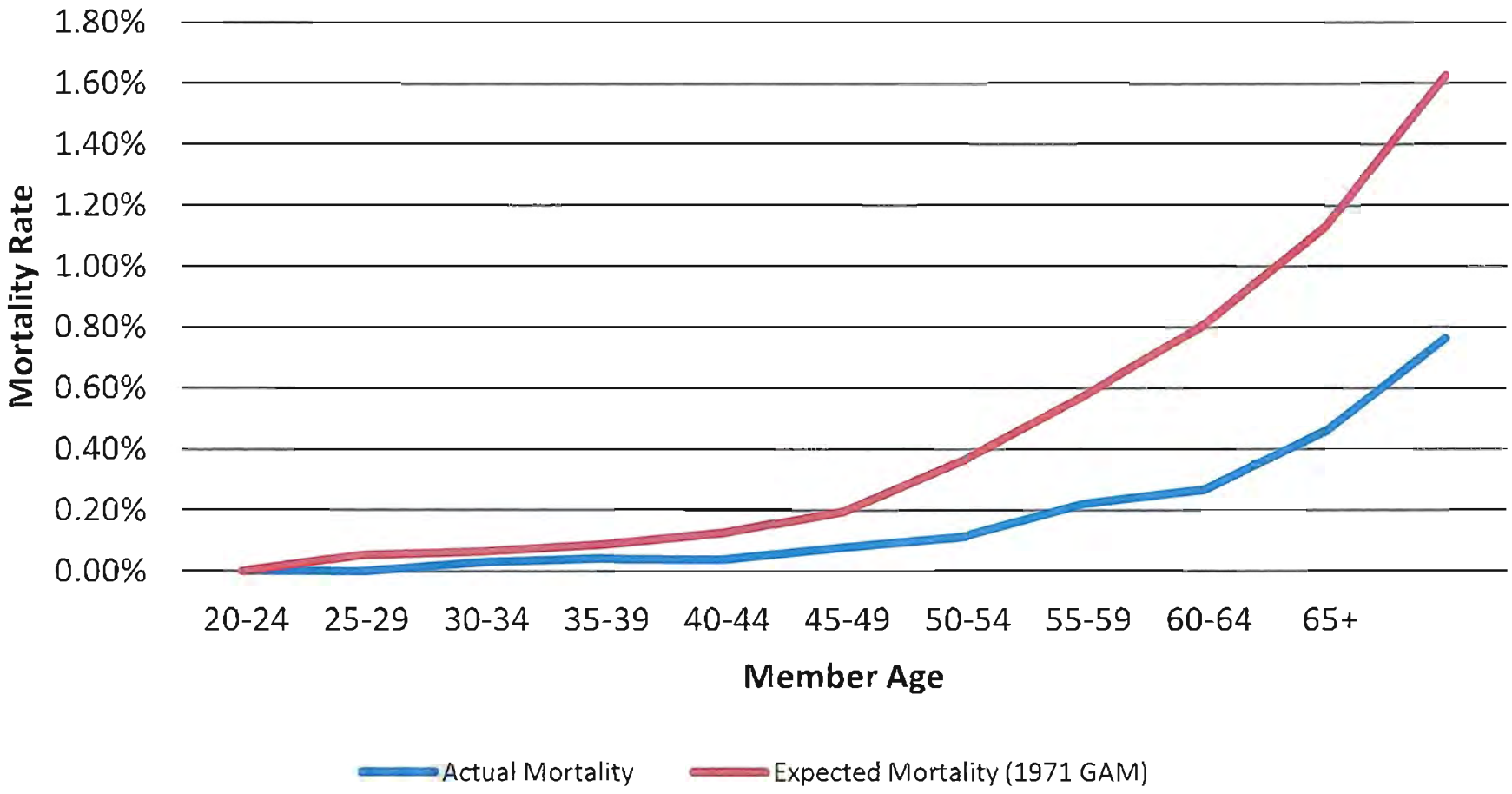
Table 5: Active Mortality Experience - 1971 GAM*

Age	Exposures	Actual Deaths	Expected Deaths**	Actual Mortality	Expected Mortality**
<20	7	0	0	0.00%	0.00%
20-24	3,274	0	2	0.00%	0.05%
25-29	16,586	5	11	0.03%	0.06%
30-34	23,493	10	21	0.04%	0.09%
35-39	27,789	11	35	0.04%	0.12%
40-44	23,711	19	47	0.08%	0.20%
45-49	19,267	22	70	0.11%	0.36%
50-54	13,123	29	76	0.22%	0.58%
55-59	4,860	13	39	0.27%	0.81%
60-64	1,089	5	12	0.46%	1.13%
65+	131	1	2	0.76%	1.63%
Total	**133,330**	**115**	**314**	**0.09%**	**0.24%**

*Data from Valuation Year 2004 through 2010 sorted by Member Age.
**Expected experience based on current assumption: 1971 GAM

Graph 5: Active Mortality Experience

Police and Fire Plans



Illinois Department of Insurance

Public Pension Division - Police and Fire Plans

Table 6: Active Mortality Experience - RP 2000CH, with BC Adj.*

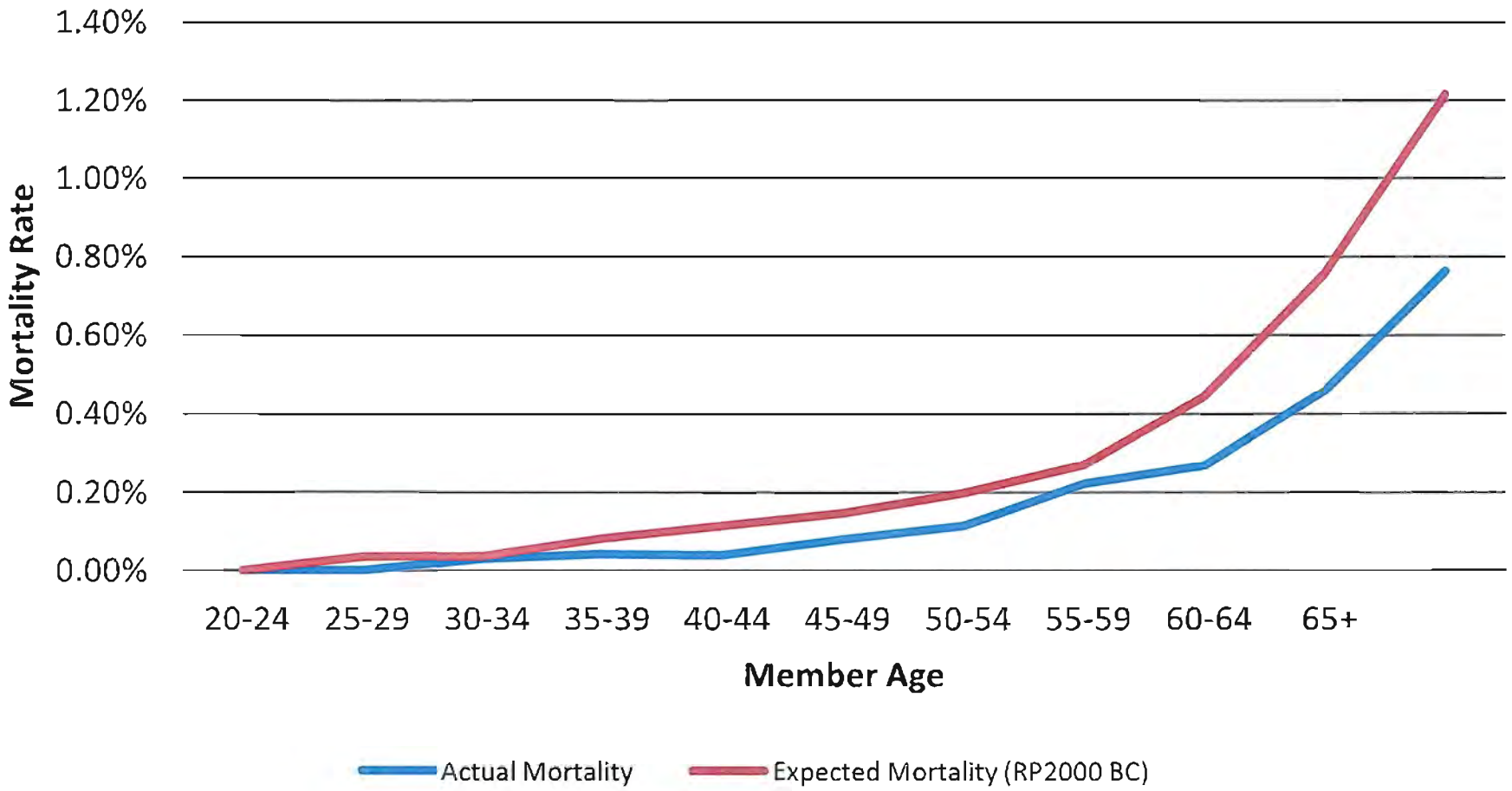
Age	Exposures	Actual Deaths	Expected Deaths**	Actual Mortality	Expected Mortality**
<20	7	0	0	0.00%	0.00%
20-24	3,274	0	1	0.00%	0.03%
25-29	16,586	5	6	0.03%	0.04%
30-34	23,493	10	19	0.04%	0.08%
35-39	27,789	11	32	0.04%	0.11%
40-44	23,711	19	35	0.08%	0.15%
45-49	19,267	22	38	0.11%	0.20%
50-54	13,123	29	35	0.22%	0.27%
55-59	4,861	13	22	0.27%	0.44%
60-64	1,089	5	8	0.46%	0.76%
65+	131	1	2	0.76%	1.21%
Total	**133,331**	**115**	**198**	**0.09%**	**0.15%**

*Data from Valuation Year 2004 through 2010 sorted by Member Age.

**Expected experience based on proposed assumption: RP 2000 Combined Healthy with Blue Collar Adjustment

Graph 6: Active Mortality Experience

Police and Fire Plans



Illinois Department of Insurance

Public Pension Division - Police and Fire Plans

Table 7: Retiree Mortality Experience - 1971 GAM*

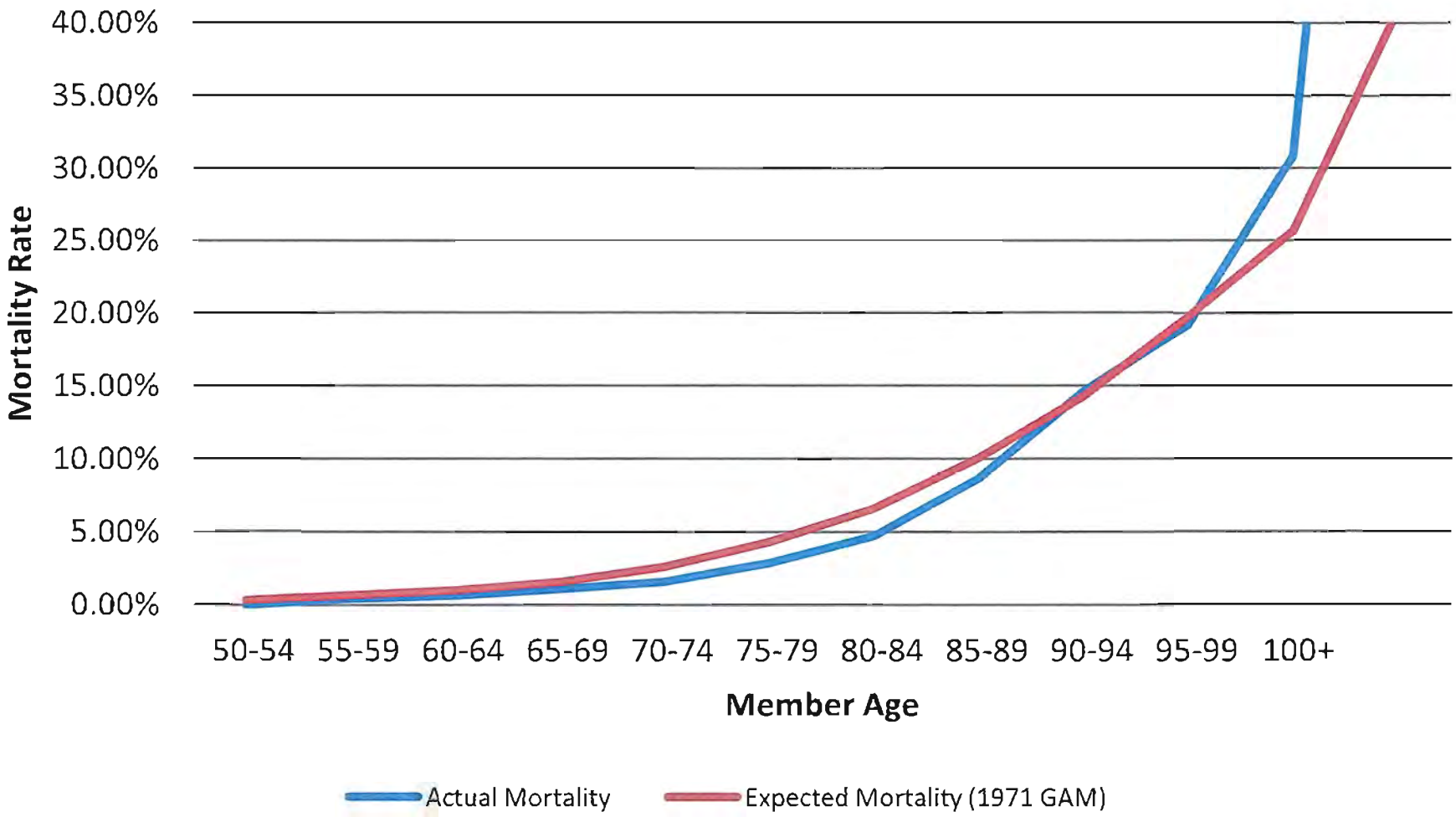
Age	Exposures	Actual Deaths	Expected Deaths**	Actual Mortality	Expected Mortality**
<50	12	0	0	0.00%	0.33%
50-54	5,554	23	38	0.41%	0.68%
55-59	11,842	75	120	0.63%	1.01%
60-64	12,347	136	195	1.10%	1.58%
65-69	9,459	151	246	1.60%	2.60%
70-74	6,448	185	278	2.87%	4.31%
75-79	4,655	220	307	4.73%	6.59%
80-84	2,713	235	273	8.66%	10.05%
85-89	788	115	113	14.59%	14.28%
90-94	219	42	43	19.18%	19.73%
95-99	68	21	17	30.88%	25.71%
100+	2	2	1	100.00%	41.00%
Total	**54,107**	**1,205**	**1,631**	**2.23%**	**3.01%**

*Data from Valuation Year 2004 through 2010 sorted by Member Age.

**Expected experience based on current assumption: 1971 GAM

Graph 7: Retiree Mortality Experience

Police and Fire Plans



Illinois Department of Insurance

Public Pension Division - Police and Fire Plans

Table 8: Retiree Mortality Experience - RP2000CH with BC Adj*

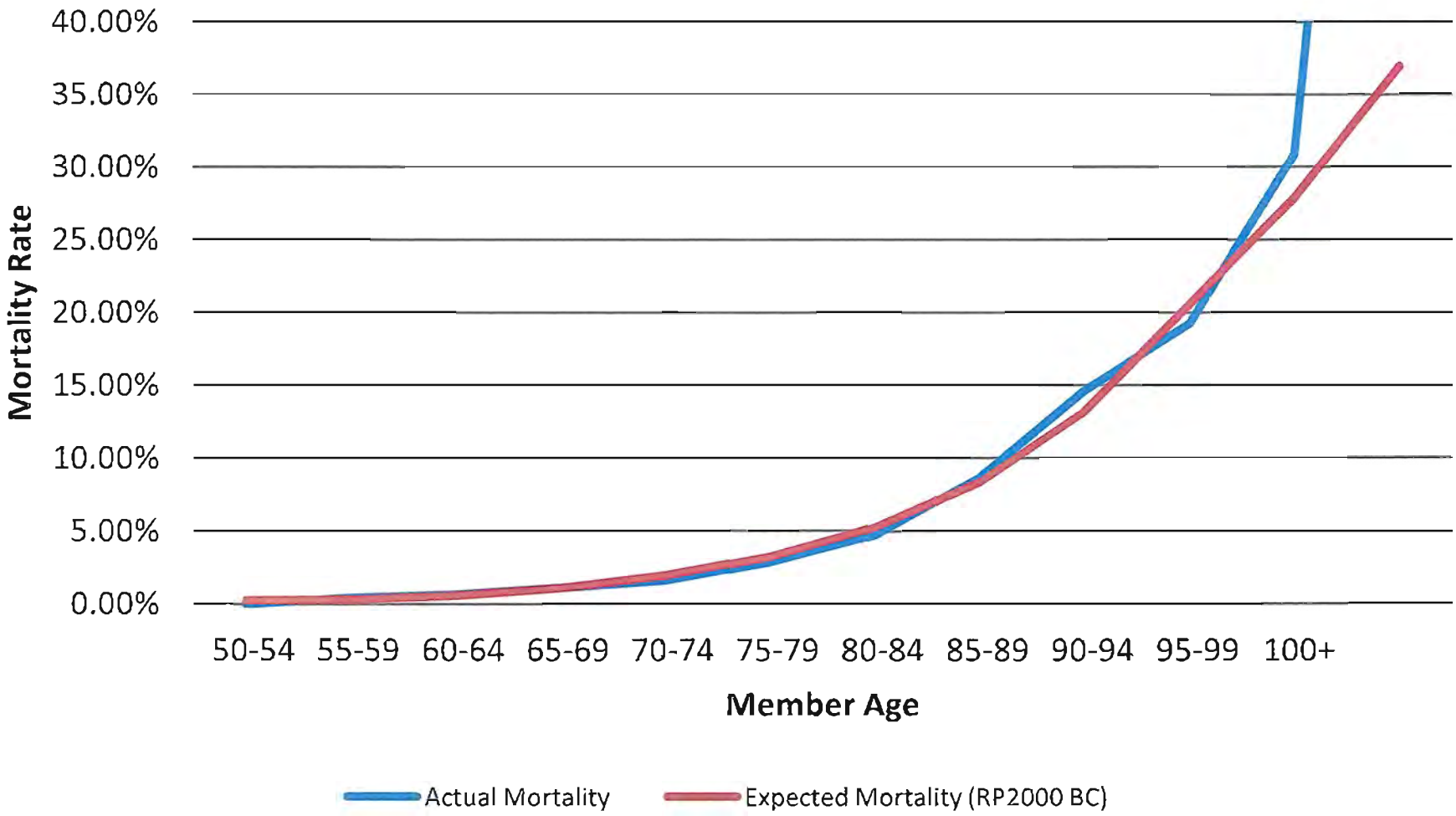
Age	Exposures	Actual Deaths	Expected Deaths**	Actual Mortality	Expected Mortality**
<50	12	0	0	0.00%	0.25%
50-54	5,554	23	18	0.41%	0.32%
55-59	11,842	75	68	0.63%	0.58%
60-64	12,347	136	133	1.10%	1.08%
65-69	9,459	151	182	1.60%	1.93%
70-74	6,448	185	207	2.87%	3.21%
75-79	4,655	220	244	4.73%	5.25%
80-84	2,713	235	227	8.66%	8.35%
85-89	788	115	104	14.59%	13.17%
90-94	219	42	45	19.18%	20.53%
95-99	68	21	19	30.88%	27.88%
100+	2	2	1	100.00%	37.00%
Total	**54,107**	**1,205**	**1,248**	**2.23%**	**2.31%**

*Data from Valuation Year 2004 through 2010 sorted by Member Age.

**Expected experience based on proposed assumption: RP 2000 Combined Healthy with Blue Collar Adjustment

Graph 8: Retiree Mortality Experience

Police and Fire Plans



Disability Rates

Overview

The disability rate assumption is the probability that a Member will become disabled while he or she is an active participant in the Fund.

The overall cost due to disability depends on the plan's disability provisions. For the Article 3 and Article 4 plans, the benefit provisions for Members who separate employment due to disability are different than the provisions for Normal Retirement and can be more valuable. It is possible that an active Member who is already eligible to retire becomes disabled, and as a result of that disability, is entitled to receive a larger immediate benefit than if he or she had retired.

It is also important to note that the level of disability benefits received depends on whether the disability was service-related or non-service-related. For example, to receive benefits for non-service-related disabilities in the Firefighter funds, there is a seven year eligibility requirement. Therefore, to measure the liabilities associated with the disability contingency, an assumption for the portion of disabilities due to service-related disabilities is necessary.

Determining future incidence of disability is difficult. Therefore, a review of past experience compared to the current assumption will provide the basis for examining the assumption.

Current Assumption

Currently, the assumed disability rates are expressed by age, with the probabilities of disability being higher for Firefighters at each age when compared to the assumed disability rates for Police Officers.

Experience

As can be seen on the following tables, the overall disability experience has been about 50% higher than expected. While there was nearly no incidence of disability at younger ages, the number of disabilities from age 30 (age 27 for police) and beyond were higher than expected based on current assumed rates.

We also reviewed the incidence of service-related disabilities versus non-service-related disabilities. Over the studied period, approximately 90% of the Fire disabilities and approximately 70% of Police disabilities were service-related.

- Table 9: Disability Experience – Police Funds
- Graph 9: Disability Experience – Police Funds
- Table 10: Disability Experience – Fire Funds
- Graph 10: Disability Experience – Fire Funds

Proposed Assumption

We recommend the following changes to the disability assumptions. We believe they will more accurately reflect the associated costs of the disability provisions.

- Lower rates of disability for ages less than 30 (age 27 for Police) with increased rates beginning at age 30. This will address the higher incidence of disability experienced in the population.
- The addition of an assumption for rate of service-related disabilities:
    - 90% rate of service-related disabilities for the Fire Funds
    - 70% rate of service-related disabilities for the Police Funds.

Illinois Department of Insurance

Public Pension Division - Police Plans

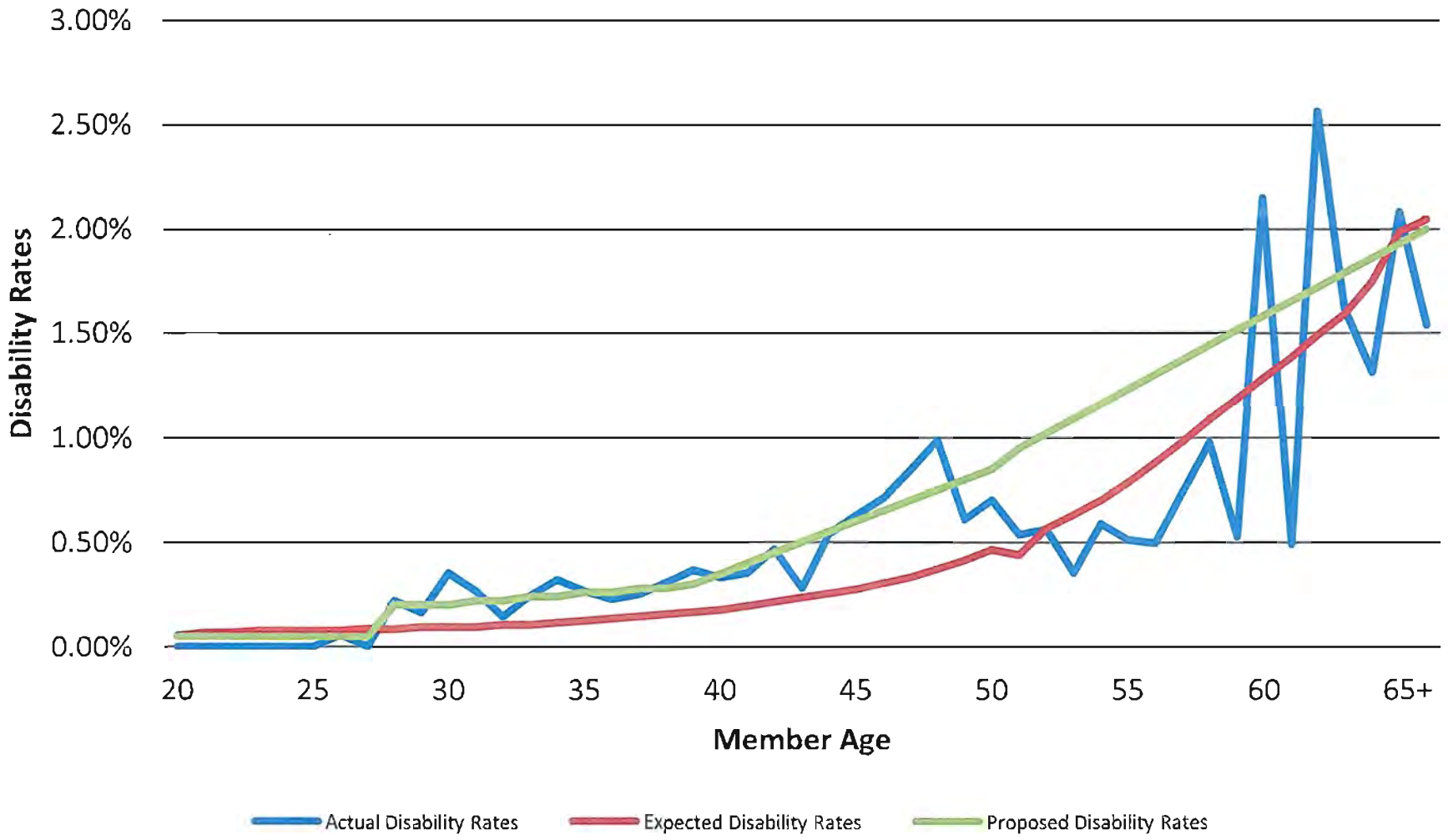
Table 9: Disability Experience - Police*

Age	Exposures	Actual Disabilities	Expected Disabilities	Actual Disability Rates	Expected Disability Rates	Proposed Rates
<20	5	0	0	0.00%	0.05%	0.05%
20	1	0	0	0.00%	0.07%	0.05%
21	41	0	0	0.00%	0.07%	0.05%
22	209	0	0	0.00%	0.08%	0.05%
23	712	0	1	0.00%	0.08%	0.05%
24	1,288	0	1	0.00%	0.08%	0.05%
25	1,717	1	1	0.06%	0.08%	0.05%
26	1,997	0	2	0.00%	0.09%	0.05%
27	2,258	5	2	0.22%	0.09%	0.20%
28	2,432	4	2	0.16%	0.10%	0.20%
29	2,551	9	2	0.35%	0.10%	0.20%
30	2,627	7	3	0.27%	0.10%	0.22%
31	2,768	4	3	0.14%	0.11%	0.22%
32	2,873	7	3	0.24%	0.11%	0.24%
33	3,115	10	4	0.32%	0.12%	0.24%
34	3,376	9	4	0.27%	0.13%	0.26%
35	3,492	8	5	0.23%	0.14%	0.26%
36	3,579	9	5	0.25%	0.15%	0.28%
37	3,573	11	6	0.31%	0.16%	0.28%
38	3,539	13	6	0.37%	0.17%	0.30%
39	3,319	11	6	0.33%	0.18%	0.35%
40	3,108	11	6	0.35%	0.20%	0.40%
41	2,999	14	7	0.47%	0.22%	0.45%
42	2,833	8	7	0.28%	0.24%	0.50%
43	2,595	14	7	0.54%	0.26%	0.55%
44	2,389	15	7	0.63%	0.28%	0.60%
45	2,256	16	7	0.71%	0.31%	0.65%
46	2,128	18	7	0.85%	0.34%	0.70%
47	2,026	20	8	0.99%	0.38%	0.75%
48	1,969	12	8	0.61%	0.42%	0.80%
49	1,994	14	9	0.70%	0.47%	0.85%
50	1,864	10	8	0.54%	0.44%	0.95%
51	1,606	9	9	0.56%	0.57%	1.02%
52	1,400	5	9	0.36%	0.63%	1.09%
53	1,189	7	8	0.59%	0.70%	1.16%
54	977	5	8	0.51%	0.79%	1.23%
55	805	4	7	0.50%	0.88%	1.30%
56	675	5	7	0.74%	0.98%	1.37%
57	511	5	6	0.98%	1.09%	1.44%
58	380	2	5	0.53%	1.19%	1.51%
59	279	6	4	2.15%	1.29%	1.58%
60	204	1	3	0.49%	1.38%	1.65%
61	156	4	2	2.56%	1.49%	1.72%
62	124	2	2	1.61%	1.59%	1.79%
63	76	1	1	1.32%	1.75%	1.86%
64	48	1	1	2.08%	1.99%	1.93%
65+	65	1	1	1.54%	2.05%	2.00%
Total	**80,128**	**318**	**208**	**0.40%**	**0.26%**	**0.46%**

*Data from Valuation Year 2004 through 2010 sorted by Member Age.

Graph 9: Disability Experience

Police Plans



Illinois Department of Insurance

Public Pension Division - Fire Plans

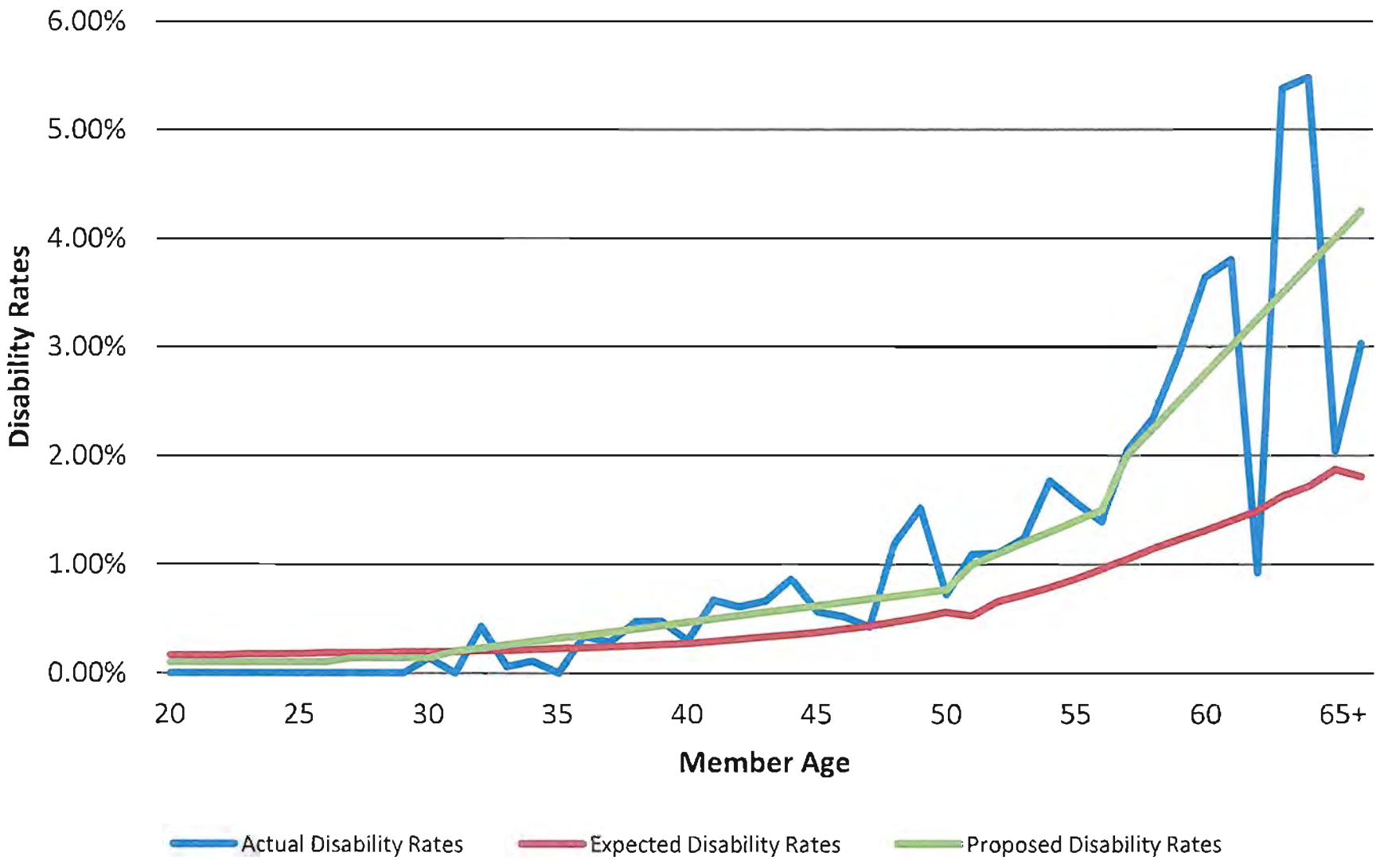
Table 10: Disability Experience - Fire*

Age	Exposures	Actual Disabilities	Expected Disabilities	Actual Disability Rates	Expected Disability Rates	Proposed Disability Rates
<20	2	0	0	0.00%	0.17%	0.10%
20	4	0	0	0.00%	0.17%	0.10%
21	13	0	0	0.00%	0.17%	0.10%
22	131	0	0	0.00%	0.18%	0.10%
23	325	0	1	0.00%	0.18%	0.10%
24	550	0	1	0.00%	0.18%	0.10%
25	758	0	1	0.00%	0.19%	0.10%
26	965	0	2	0.00%	0.19%	0.14%
27	1,138	0	2	0.00%	0.19%	0.14%
28	1,321	0	3	0.00%	0.20%	0.14%
29	1,449	2	3	0.14%	0.20%	0.14%
30	1,549	0	3	0.00%	0.20%	0.20%
31	1,637	7	3	0.43%	0.21%	0.23%
32	1,727	1	4	0.06%	0.21%	0.26%
33	1,856	2	4	0.11%	0.22%	0.29%
34	1,965	0	4	0.00%	0.23%	0.32%
35	2,041	7	5	0.34%	0.24%	0.35%
36	2,077	6	5	0.29%	0.25%	0.38%
37	2,105	10	5	0.48%	0.26%	0.41%
38	2,085	10	6	0.48%	0.27%	0.44%
39	1,979	6	6	0.30%	0.28%	0.47%
40	1,939	13	6	0.67%	0.30%	0.50%
41	1,965	12	6	0.61%	0.32%	0.53%
42	1,968	13	7	0.66%	0.34%	0.56%
43	1,968	17	7	0.86%	0.36%	0.59%
44	1,947	11	7	0.57%	0.38%	0.62%
45	1,911	10	8	0.52%	0.41%	0.65%
46	1,861	8	8	0.43%	0.44%	0.68%
47	1,761	21	8	1.19%	0.48%	0.71%
48	1,713	26	9	1.52%	0.52%	0.74%
49	1,648	12	9	0.73%	0.57%	0.77%
50	1,555	17	8	1.09%	0.54%	1.00%
51	1,358	15	9	1.10%	0.67%	1.10%
52	1,209	15	9	1.24%	0.73%	1.20%
53	1,075	19	9	1.77%	0.79%	1.30%
54	890	14	8	1.57%	0.87%	1.40%
55	718	10	7	1.39%	0.96%	1.50%
56	538	11	6	2.04%	1.05%	2.00%
57	427	10	5	2.34%	1.15%	2.25%
58	307	9	4	2.93%	1.23%	2.50%
59	220	8	3	3.64%	1.31%	2.75%
60	158	6	2	3.80%	1.41%	3.00%
61	108	1	2	0.93%	1.49%	3.25%
62	93	5	2	5.38%	1.63%	3.50%
63	73	4	1	5.48%	1.72%	3.75%
64	49	1	1	2.04%	1.88%	4.00%
65+	66	2	1	3.03%	1.81%	4.25%
Total	**53,202**	**341**	**209**	**0.64%**	**0.39%**	**0.62%**

*Data from Valuation Year 2004 through 2010 sorted by Member Age.

Graph 10: Disability Experience

Fire Plans



Economic Assumptions

ASOP No. 27, *Selection of Economic Assumptions for Measuring Pension Obligations,* provides guidance to actuaries in selecting (including giving advice on selecting) economic assumptions – primarily investment return, discount rate, and salary scale – for measuring obligations under defined benefit pension plans.

Throughout the remainder of this section, we have used the standards set forth in ASOP No. 27 as a guideline for reviewing and if applicable, selecting proposed changes to the following economic actuarial assumptions:

- Investment Return
- Salary Increases
- Payroll Growth Rate (used for amortizing the Unfunded Actuarial Accrued Liability)
- Cost-of-Living

Please keep in mind that ASOP No. 27 states that "the best an actuary can do is to use professional judgment to estimate possible future economic outcomes based on past experience and future expectations, and to select assumptions based upon that application of professional judgment."

Investment Return Assumption

Overview

The investment return assumption used in actuarial valuations should be set in accordance with Actuarial Standard of Practice No. 27. The ASOP requires that the investment return assumption fall within a best-estimate range of anticipated future experience Therefore, the assumption should be set based on the long-term expectation of the plan as determined by the investment policy statement, target asset allocation and capital market assumptions. These factors are not consistent for all of the Article 3 and Article 4 Plans in the State so we reviewed hypothetical portfolios developed based on typical Article 3 and Article 4 Plans across the State.

The Illinois Pension Code contains strict investment limitations for Article 3 and Article 4 Pension Plans based on the asset level of each respective fund. These limitations lead to dramatic variations in the target asset allocations of small funds and large funds. Therefore, we do not believe a single investment return assumption for all of the Article 3 and Article 4 plans is appropriate. We suggest implementing an investment return assumptions that varies based on the market value of asset level of the plan. We recommend adoption of a tiered assumption based on the specific breakpoints outlined in the Illinois Pension Code. The applicable assumption will vary based on the following portfolios sizes:

Portfolio 1: Less than $2.5 million
Portfolio 2: Less than $5.0 million but more than $2.5 million
Portfolio 3: Less than $10.0 million but more than $5.0 million
Portfolio 4: More than $10.0 million

As time passes, we would expect the smaller portfolios (i.e., Portfolios 1 – 3) to grow with investment earnings and contributions and migrate to the larger portfolios where they can invest a larger portion of the assets in equities. Our analysis factors in the increasing expectations so a plan that is currently in Portfolio 1 will not be subject to those severe restrictions for the life of the plan.

Summary of Capital Market Assumptions

In setting the investment return assumption, we relied on 20-year capital market assumptions provided by Raymond James. Additionally, we reviewed capital market assumptions provided by other investment institutions to ensure the reasonableness of the information provided by Raymond James.

The capital market assumptions are forward-looking data points based on economic models for equity, fixed income and other investments.

The equity capital market assumptions are based on the concepts of dividend discount model and economic theory. The inputs for forward equity returns are based on expectations for real economic growth, inflation, dividends and P/E expansion or contraction. These expectations are geometrically linked to produce the long-term assumptions.

Fixed income capital market assumptions are determined based on current yields, spreads, default expectations, currencies and other factors. These are adjusted based on the most likely path of interest rates as well as the impact of the spreads, default rates, recoveries, real rates, inflation, etc.

Current Assumptions

A table summarizing the capital market assumption by asset class is included below. These assumptions are based on a building-block approach where the returns are a combination of components. For example, the current U.S. Large Cap Equity is approximately 8.3%. This rate includes and assumed rate of inflation of 2.5%, a real economic growth assumption of 2.7% and dividends of 2.3%. Geometrically linking these returns together gives an expected rate of return of approximately 7.6%. Combining this with an expected alpha of 0.65% (for active management) brings us to the 8.3% assumption. The assumed standard deviation is 20%. Each asset class in the U.S. is beta adjusted to account for additional risk and expected return. This same process is repeated for each region of the world to determine non-U.S. assumptions.

	Mean-Variance Assumptions			
	20-Yr Assumptions		Intermediate Gross Rate of Return	
	Geometric	STD	10Yr	5-Yr
US Large Cap Equity	8.3%	20.0%	8.3%	8.5%
US Small/Mid Cap Equity	9.3%	23.0%	9.2%	9.2%
Non-US Developed Large Cap Equity Unhedged	8.4%	19.7%	8.4%	8.7%
Emerging Markets Equity Unhedged	10.5%	26.0%	10.8%	11.1%
US Corporate Bonds	4.2%	6.0%	3.0%	0.7%
US Government Fixed Income	3.2%	7.0%	2.1%	0.1%
US Cash	3.0%	1.3%	2.5%	1.7%
Global Real Estate - REITS	8.3%	15.8%	8.3%	8.3%
Commodities - Long Only	4.9%	18.0%	4.8%	4.8%
Inflation	2.5%	1.8%		
Real GDP Growth	2.7%	1.9%		
Nominal GDP Growth	5.3%	2.3%		

Portfolio Returns

Four model portfolios were created using the parameters provided and optimal allocations. Conservative constraints were used to create each of the four portfolios. The table below lists the four portfolio allocations as well as the expected gross return using the 10 year and 20 year assumptions. The portfolio returns and standard deviations were created using the forward-looking capital market assumptions with a mean variance optimizer. The assumptions developed in this section assume a plan remains within the same portfolio for the life of the fund and does not consider migration to the larger portfolios.

	Portfolio 1	Portfolio 2	Portfolio 3	Portfolio 4
Portfolio Asset Level	**Less Than $2.5 M**	**$2.5 - 5.0 M**	**$5.0 - 10 M**	**$10.0 M or More**
Large Cap	7.50%	10.50%	11.25%	12.75%
Small-to-Mid Cap	2.50%	3.50%	4.75%	6.25%
U.S. Equity	10.00%	14.00%	16.00%	19.00%
Developed Non-U.S. Equity	0.00%	10.00%	13.00%	16.00%
Emerging Market Equities	0.00%	4.00%	6.00%	8.00%
Total International Equity	0.00%	14.00%	19.00%	24.00%
Total Equity	**10.00%**	**28.00%**	**35.00%**	**43.00%**
Global Real Estate	0.00%	3.00%	5.00%	7.00%
Commodities	0.00%	4.00%	5.00%	5.00%
Total Alternatives	**0.00%**	**7.00%**	**10.00%**	**12.00%**
Total Fixed Income	**90.00%**	**65.00%**	**55.00%**	**45.00%**
10 Year Assumption	3.76%	5.45%	6.11%	6.71%
20 Year Assumption	4.87%	6.26%	6.79%	7.26%

Plan Progression and Returns

Over time, a plan will migrate from one portfolio allocation to another as the asset level increases with contributions and investment earnings. A plan could start with Portfolio 1 (10% equity) and over time migrate to Portfolio 2 and so on until it ends with Portfolio 4 (at least 55% equity and alternatives). There are four potential paths a plan could take: start in Portfolio 1 and

end in Portfolio 4, start with Portfolio 2 and end with Portfolio 4, start with Portfolio 3 and end with Portfolio 4 and, lastly, start in Portfolio 4 and remain there. There are numerous other possibilities; however, these seem most plausible given growth in assets under management by capital appreciation and contributions to the plan. It is assumed that a plan will migrate upward to the next portfolio every 10 years. Some plans will move to the next tier in a period less than 10 years while some plans may never leave its current tier. The 10 year assumption is intended to represent the average of all the plans in the State. The table below lists the return for each of the three scenarios and is calculated by looking at the average return for each of the portfolios during the holding periods. These are long-term assumptions and are tied to the capital market assumptions listed above.

The model used in our analysis develops gross returns and does not incorporate the investment fees incurred in achieving those returns. As a result, an additional adjustment is needed to determine the recommended assumption for each of the portfolios. Generally, a plan tends to pay 35 to 50 basis points for the fixed income investments within their portfolio and 75 to 100 basis points for equity investments in the portfolio. The smaller plans typically fall on the higher end of each range but are invested primarily in fixed income investments. Therefore, we believe an assumption of 55 basis points is reflective of the fees paid by each of the portfolios.

The table below summarizes the development of the expected net-of-fees rate of return for each of the portfolios:

Scenario	Expected Gross Rate of Return	Expected Investment Fees	Expected Net-of-Fees Rate of Return
Start in Portfolio 1 to Portfolio 4	5.57%	0.55%	5.02%
Start in Portfolio 2 to Portfolio 4	6.52%	0.55%	6.00%
Start in Portfolio 3 to Portfolio 4	7.02%	0.55%	6.47%
Start in Portfolio 4	7.26%	0.55%	6.71%

Proposed Assumption

As described above, we do not believe a single investment return assumption is appropriate for Article 3 and Article 4 funds due to the investment restrictions outlined in the Illinois Pension Code. We recommend changing the current assumption of 7.0% for all plans to the tiered rates summarized below.

Scenario	Proposed Assumption
Funds Less Than $2.5 Million	5.00%
Funds Between $2.5 and $5.0 Million	6.00%
Funds Between $5.0 and $10.0 Million	6.50%
Funds More Than $10.0 Million	6.75%

We believe that each rate falls within the best-estimate range and is more reflective of the actual returns that will be earned by these plans over the long-term. Lowering the assumption from 7.0% will result in a larger tax levy for all funds since we are assuming investment income is replaced by contributions from the plan sponsor. Obviously, the requirements will increase by a larger percentage for the smaller funds. Unfortunately, this is the reality due to the investment restrictions facing these funds.

Historical Returns

While not used to set the assumption, attached is a summary of historical returns by Fund size for both Police and Fire Funds. This information is intended to outline the returns these plans have earned since 2004.Note that given the increased allowable equity percentages as portfolio size increases, returns generally increase with the size of the Fund.

- Table 11: Average Historical Returns by Fund Size – Police
- Table 12: Average Historical Returns by Fund Size – Fire

Illinois Department of Insurance
Police Plans
Table 11: Average Historical Returns by Fund Size

Investment Return History (Net-of-Fees)
Grouped by Asset Totals

Total Assets in Plan (in Millions)	Average Investment Return*
Greater than 10	6.05%
5 - 10	5.48%
2.5 - 5	4.55%
Less than 2.5	3.37%

*Average Investment Returns were calculated using the annual investment returns from 2004 through 2011.

Illinois Department of Insurance
Fire Plans
Table 12: Average Historical Returns by Fund Size

Investment Return History (Net-of-Fees)
Grouped by Asset Totals

Total Assets in Plan (in Millions)	Average Investment Return*
Greater than 10	5.92%
5 - 10	5.26%
2.5 - 5	4.61%
Less than 2.5	3.20%

*Average Investment Returns were calculated using the annual investment returns from 2004 through 2011.

Salary Increases

Overview

The salary increase assumption is used to project a Member's salary from the valuation date until the assumed retirement age. Salary increase assumptions are typically represented as a flat salary scale assumption or as a service-based assumption. A flat salary scale assumption assumes that a Member will get the same rate of salary increase for all years, whereas a service-based table may assume different rates based on the Member's longevity with the Fund.

The salary increase assumption plays an important role in measuring individual pension costs and obligations.

Current Assumption

Currently, the valuation assumes a flat salary increase rate equal to 5.5% per year.

Experience

To assess the current 5.5% assumed annual increase and provide a basis for an updated assumption, we have reviewed the actual salary experience over the studied time period.

On the following pages, we have included a service-based chart for both the Police and Fire Funds that compares the actual experience to the current assumption. Historically, Members received higher average salary increases toward the beginning of their careers and lower average salary increases later in their careers.

- Table 13: Average Salary Increases by Service – Police
- Graph 13: Average Salary Increases by Service – Police
- Table 14: Average Salary Increases by Service – Fire
- Graph 14: Average Salary Increases by Service – Fire

Proposed Assumption

Given these results, we propose changing from a flat salary scale assumption to a service-based assumption. The proposed increase rates for both the Police and Fire Funds are applicable to Tier 1 and Tier 2 Members and can be seen on the following charts, along with graphs to show a visual representation of how the actual and proposed increase rates compare to the current flat 5.5% per year assumption.

Illinois Department of Insurance

Public Pension Division - Police Plans

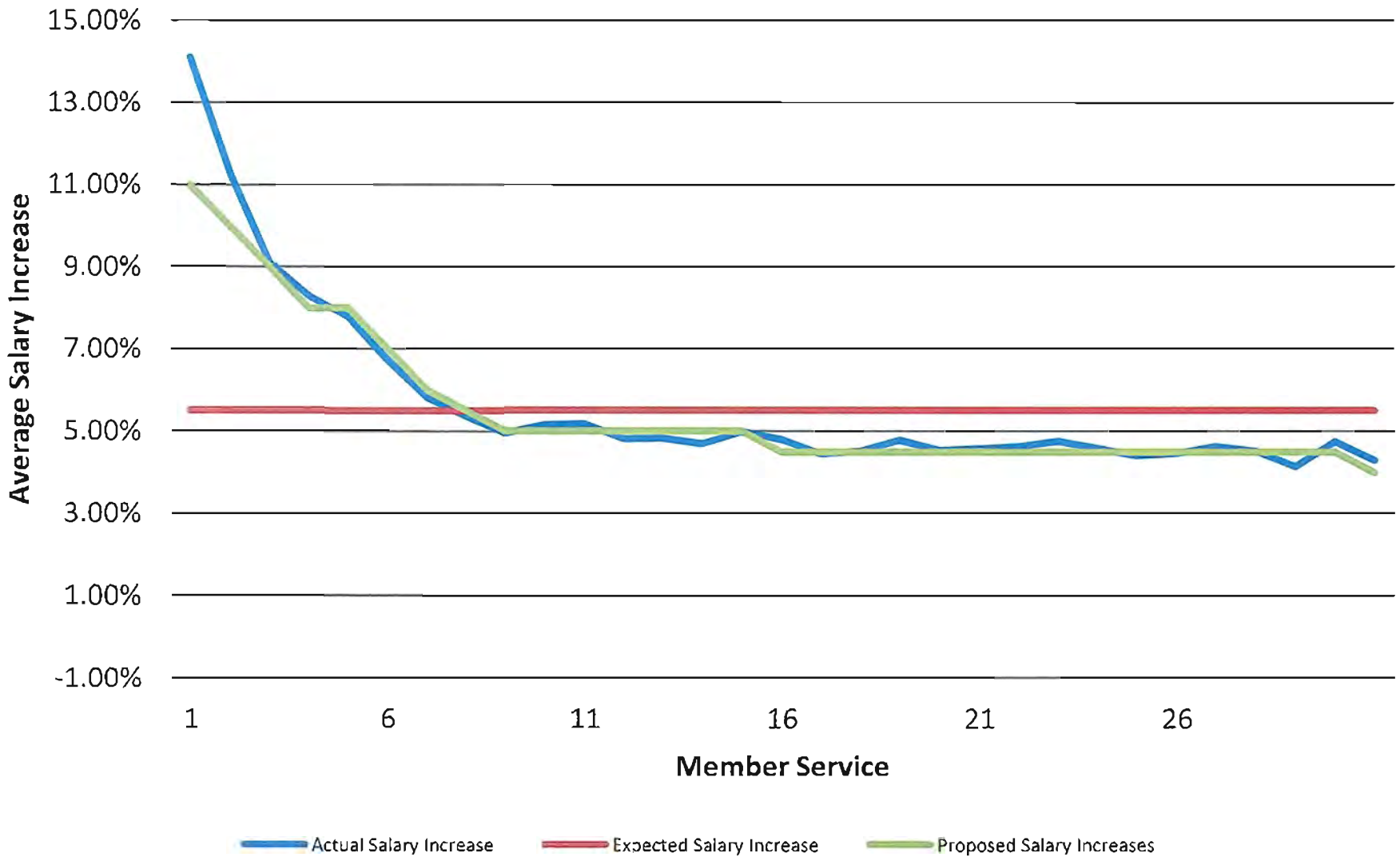
Table 13: Average Salary Increases by Service - Police*

Service	Eligible Members	Prior Year Salary**	Actual Salary**	Expected Salary**	Actual Salary Increase	Expected Salary Increase	Proposed Salary Increase
0	2,383	105,884	120,816	111,707	14.10%	5.50%	11.00%
1	4,178	197,768	220,096	208,645	11.29%	5.50%	10.00%
2	4,006	204,188	222,769	215,419	9.10%	5.50%	9.00%
3	3,902	209,819	227,222	221,359	8.29%	5.50%	8.00%
4	3,805	213,236	229,838	224,964	7.79%	5.50%	8.00%
5	3,785	220,470	235,302	232,596	6.73%	5.50%	7.00%
6	3,739	225,114	238,228	237,495	5.83%	5.50%	6.00%
7	3,714	228,840	241,120	241,426	5.37%	5.50%	5.50%
8	3,573	225,148	236,299	237,531	4.95%	5.50%	5.00%
9	3,436	218,311	229,547	230,318	5.15%	5.50%	5.00%
10	3,199	207,166	217,888	218,560	5.18%	5.50%	5.00%
11	2,873	189,896	199,049	200,340	4.82%	5.50%	5.00%
12	2,681	180,215	188,923	190,127	4.83%	5.50%	5.00%
13	2,540	172,078	180,165	181,543	4.70%	5.50%	5.00%
14	2,549	174,445	183,142	184,039	4.99%	5.50%	5.00%
15	2,484	171,299	179,523	180,720	4.80%	5.50%	4.50%
16	2,487	173,082	180,788	182,601	4.45%	5.50%	4.50%
17	2,484	174,867	182,781	184,485	4.53%	5.50%	4.50%
18	2,401	171,265	179,453	180,685	4.78%	5.50%	4.50%
19	2,282	165,932	173,468	175,058	4.54%	5.50%	4.50%
20	1,931	142,837	149,377	150,693	4.58%	5.50%	4.50%
21	1,608	121,266	126,880	127,936	4.63%	5.50%	4.50%
22	1,354	102,649	107,535	108,295	4.76%	5.50%	4.50%
23	1,190	90,931	95,107	95,932	4.59%	5.50%	4.50%
24	1,175	89,046	92,973	93,944	4.41%	5.50%	4.50%
25	1,125	84,683	88,466	89,340	4.47%	5.50%	4.50%
26	1,089	81,947	85,746	86,454	4.64%	5.50%	4.50%
27	1,024	78,952	82,525	83,295	4.52%	5.50%	4.50%
28	880	69,321	72,198	73,134	4.15%	5.50%	4.50%
29	619	49,510	51,861	52,233	4.75%	5.50%	4.50%
30+	1,165	95,246	99,344	100,484	4.30%	5.50%	4.00%
Total	**75,661**	**4,835,410**	**5,118,428**	**5,101,358**	**5.85%**	**5.50%**	**5.73%**

*Data from Valuation Year 2004 through 2010 sorted by Member Service.

**All salary figures are are shown as 1,000's.

Graph 13: Average Salary Increases - Police



Illinois Department of Insurance

Public Pension Division - Fire Plans

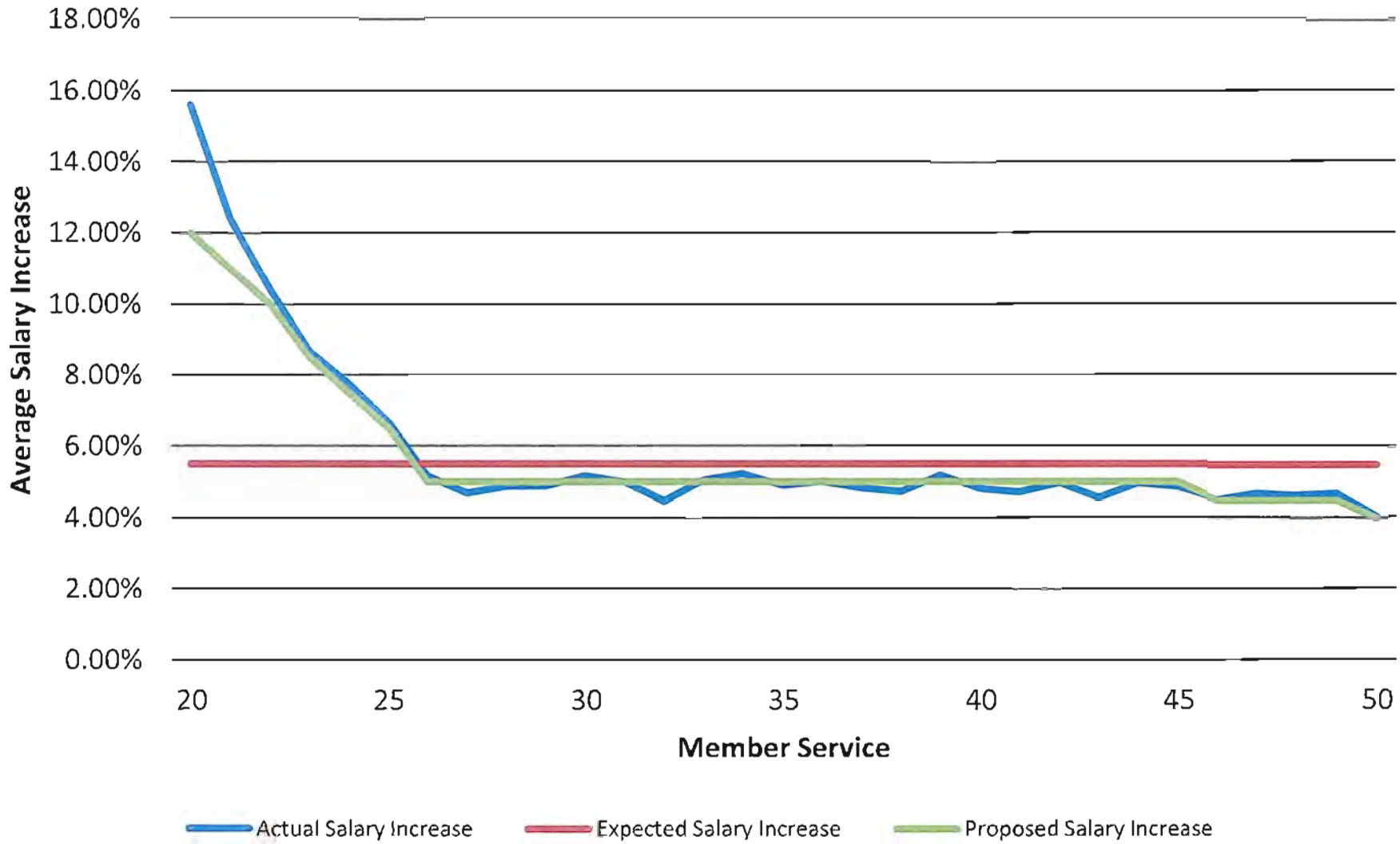
Table 14: Average Salary Increases by Service - Fire*

Service	Eligible Members	Prior Year Salary**	Actual Salary**	Expected Salary**	Actual Salary Increase	Expected Salary Increase	Proposed Salary Increase
0	1,701	76,634	88,600	80,849	15.62%	5.50%	12.00%
1	2,752	133,278	149,803	140,609	12.40%	5.50%	11.00%
2	2,536	132,337	146,102	139,615	10.40%	5.50%	10.00%
3	2,405	133,783	145,374	141,141	8.66%	5.50%	8.50%
4	2,325	134,712	145,151	142,121	7.75%	5.50%	7.50%
5	2,267	136,722	145,830	144,242	6.66%	5.50%	6.50%
6	2,261	140,483	147,747	148,210	5.17%	5.50%	5.00%
7	2,291	144,654	151,433	152,610	4.69%	5.50%	5.00%
8	2,247	143,647	150,655	151,548	4.88%	5.50%	5.00%
9	2,162	139,466	146,271	147,136	4.88%	5.50%	5.00%
10	2,015	131,217	138,002	138,434	5.17%	5.50%	5.00%
11	1,950	129,821	136,306	136,962	4.99%	5.50%	5.00%
12	1,849	125,788	131,416	132,707	4.47%	5.50%	5.00%
13	1,770	121,016	127,126	127,672	5.05%	5.50%	5.00%
14	1,744	120,252	126,539	126,866	5.23%	5.50%	5.00%
15	1,740	121,362	127,303	128,037	4.90%	5.50%	5.00%
16	1,689	118,981	124,943	125,525	5.01%	5.50%	5.00%
17	1,663	119,283	125,046	125,844	4.83%	5.50%	5.00%
18	1,655	120,913	126,633	127,563	4.73%	5.50%	5.00%
19	1,543	114,086	119,997	120,361	5.18%	5.50%	5.00%
20	1,347	101,634	106,524	107,224	4.81%	5.50%	5.00%
21	1,155	87,710	91,848	92,534	4.72%	5.50%	5.00%
22	1,014	78,158	82,048	82,457	4.98%	5.50%	5.00%
23	930	72,149	75,442	76,118	4.56%	5.50%	5.00%
24	878	66,833	70,152	70,508	4.97%	5.50%	5.00%
25	889	67,719	71,017	71,443	4.87%	5.50%	5.00%
26	858	66,506	69,514	70,164	4.52%	5.50%	4.50%
27	822	64,533	67,568	68,082	4.70%	5.50%	4.50%
28	710	56,730	59,366	59,850	4.65%	5.50%	4.50%
29	533	43,203	45,233	45,580	4.70%	5.50%	4.50%
30+	1,037	82,884	86,250	87,444	4.06%	5.50%	4.00%
Total	**50,738**	**3,326,495**	**3,525,239**	**3,509,456**	**5.97%**	**5.50%**	**5.84%**

*Data from Valuation Year 2004 through 2010 sorted by Member Age.

**All salary figures are are shown as 1,000's.

Graph 14: Average Salary Increases - Fire



Payroll Growth Rate

Overview

The payroll growth rate is the assumption used to predict how the aggregate payroll of a Fund will increase on average from one year to the next. It is a necessary assumption when valuing a Pension Fund because it is used for purposes of amortizing the Unfunded Actuarial Accrued Liabilities. Currently, the payroll growth assumption is equal to the salary increase assumption, which is 5.5% per year.

The payroll growth assumption should reflect factors other than the expected individual salary increases year over year. In addition, it is important to consider the growth (or reduction) in the active population for a Fund. For example, if each active Member of a population happens to receive a 5.5% salary increase, but in that same time no Members terminate employment and 5 additional Members are hired onto the workforce, then the payroll will have grown by greater than 5.5% for that year. Likewise, the aggregate payroll of a Fund could decrease from one year to the next if a number of people retire or terminate over the course of the year. The payroll for any Fund is also affected as longer service Members who are earning higher salaries begin to retire and are replaced with new entrants with lower pay. The purpose of the payroll growth rate is to determine a long-term expected average of the rate in which payroll will grow, even if the year-over-year experience does not always follow the pattern of the assumption.

Experience

In the course of this analysis, we have determined that the average payroll growth for Police Funds was approximately 4.3% and the average payroll growth for Fire Funds was approximately 4.4% over the studied time period. Additionally, in reviewing the historical payroll over the past 10 years for 200 public pension funds outside of the State of Illinois, we have determined that the average increase over the 10 year period falls between 3.0 – 5.0%. Given the overall experience, we are recommending a reduction in the payroll growth assumption from 5.5% to 4.5% per year.

Tier 2 Cost-of-Living Adjustment

Overview

Currently, since the cost-of-living adjustment (COLA) for the plans is a flat 3 percent, the valuations do not reflect a COLA assumption. The 3 percent increases specified in the statute are valued.

However, the pension changes introduced in 2011 provide for the following COLA for Tier 2 Members: An annual increase each January 1 equal to the lesser of 3.0% or one-half of the annual unadjusted percentage increase in the Consumer Price Index-U for the 12 months ending with the September proceeding each November 1. The COLA is applied to the original pension amount after the attainment of age 60 or first anniversary of the pension start date, whichever is later. Since the COLA will vary depending on the value of the CPI-U, future valuations will need to reflect a COLA assumption for Tier 2 Members.

Experience

To determine an appropriate assumption for the expected future COLA's that Tier 2 Members will receive, we have reviewed the annual average increase in the CPI-U over the past 20 years. The chart on the following page shows that the average increase over this time period is approximately 2.5%.

- Table 15: Historical CPI Increases

Proposed Assumption

We are recommending that a COLA assumption of 1.25% be incorporated into future valuations for Tier 2 Members.

Consumer Price Index - All Urban Consumers

1992 - 2011

Table 15: Historical CPI Increases

Year Ending	CPI Return
2011	2.96%
2010	1.50%
2009	2.72%
2008	0.09%
2007	4.08%
2006	2.56%
2005	3.39%
2004	3.26%
2003	1.88%
2002	2.40%
2001	1.55%
2000	3.37%
1999	2.67%
1998	1.61%
1997	1.73%
1996	3.28%
1995	2.56%
1994	2.66%
1993	2.73%
1992	2.95%
20-Year Average	**2.49%**

Recommended Assumption Sets

Police Pension Assumption Set

Active and Retiree Mortality

RP2000 Combined Healthy Mortality Table with a Blue Collar Adjustment with no projection. It is assumed that 5% of active deaths are service-related.

Disabled Mortality

RP2000 Disabled Retiree Mortality with no projection.

Investment Return Assumption

Varies by asset level of fund with 5.00% for funds with less than $2.5 million, 6.00% for funds with between $2.5 million and $5.0 million, 6.50% for funds with between $5.0 million and $10.0 million and 6.75% for funds with more than $10.0 million

Retirement Rates

The retirement rates for the plan are as follows:

Age	Rate	Age	Rate
50	20%	60	33%
51	20%	61	33%
52	20%	62	33%
53	20%	63	50%
54	20%	64	50%
55	25%	65	50%
56	25%	66	50%
57	25%	67	50%
58	25%	68	50%
59	25%	69	50%
		70+	100%

Withdrawal Rates

The withdrawal rates for the plan are as follows:

Age	Rate	Age	Rate
20	10.00%	35	3.00%
21	10.00%	36	3.00%
22	10.00%	37	3.00%
23	10.00%	38	2.00%
24	10.00%	39	2.00%
25	7.50%	40	2.00%
26	6.25%	41	2.00%
27	6.25%	42	2.00%
28	5.00%	43	2.00%
29	5.00%	44	2.00%
30	5.00%	45	2.00%
31	5.00%	46	2.00%
32	4.00%	47	2.00%
33	4.00%	48	2.00%
34	4.00%	49	2.00%
		50+	3.50%

Disability Rates

The disability rates for the plan are outlined in the table below. 70% of the disabilities are assumed to be service-related.

Age	Rate	Age	Rate	Age	Rate
20	0.05%	35	0.26%	50	0.95%
21	0.05%	36	0.28%	51	1.02%
22	0.05%	37	0.28%	52	1.09%
23	0.05%	38	0.30%	53	1.16%
24	0.05%	39	0.35%	54	1.23%
25	0.05%	40	0.40%	55	1.30%
26	0.05%	41	0.45%	56	1.37%
27	0.20%	42	0.50%	57	1.44%
28	0.20%	43	0.55%	58	1.51%
29	0.20%	44	0.60%	59	1.58%
30	0.22%	45	0.65%	60	1.65%
31	0.22%	46	0.70%	61	1.72%
32	0.24%	47	0.75%	62	1.79%
33	0.24%	48	0.80%	63	1.86%
34	0.26%	49	0.85%	64	1.93%
				65+	2.00%

Salary Increases

The salary increases for the plan are as follows:

Service	Salary Increase	Service	Salary Increase	Service	Salary Increase
0	11.0%	10	5.0%	20	4.5%
1	10.0%	11	5.0%	21	4.5%
2	9.0%	12	5.0%	22	4.5%
3	8.0%	13	5.0%	23	4.5%
4	8.0%	14	5.0%	24	4.5%
5	7.0%	15	4.5%	25	4.5%
6	6.0%	16	4.5%	26	4.5%
7	5.5%	17	4.5%	27	4.5%
8	5.0%	18	4.5%	28	4.5%
9	5.0%	19	4.5%	29	4.5%
				30+	4.0%

Payroll Growth

4.5% per year

Marital Status

80% of Members are assumed to be married.

Spouse's Age

Males are assumed to be three years older than females

Tier 2 Cost-of-Living Adjustment

1.25%

Fire Pension Assumption Set

Active and Retiree Mortality

RP2000 Combined Healthy Mortality Table with a Blue Collar Adjustment with no projection. It is assumed that 5% of active deaths are service-related.

Disabled Mortality

RP2000 Disabled Retiree Mortality with no projection.

Investment Return Assumption

Varies by asset level of fund with 5.00% for funds with less than $2.5 million, 6.00% for funds with between $2.5 million and $5.0 million, 6.50% for funds with between $5.0 million and $10.0 million and 6.75% for funds with more than $10.0 million

Retirement Rates

The retirement rates for the plan are as follows:

Age	Rate	Age	Rate
50	14%	60	25%
51	14%	61	25%
52	14%	62	25%
53	14%	63	33%
54	20%	64	33%
55	20%	65	50%
56	20%	66	50%
57	20%	67	50%
58	20%	68	50%
59	20%	69	50%
		70+	100%

Withdrawal Rates

The withdrawal rates for the plan are as follows:

Age	Rate	Age	Rate
20	9.00%	35	2.00%
21	9.00%	36	2.00%
22	9.00%	37	2.00%
23	9.00%	38	1.00%
24	9.00%	39	1.00%
25	5.00%	40	1.00%
26	5.00%	41	1.00%
27	5.00%	42	1.00%
28	5.00%	43	1.00%
29	5.00%	44	1.00%
30	2.50%	45	1.00%
31	2.50%	46	1.00%
32	2.50%	47	1.00%
33	2.50%	48	1.00%
34	2.50%	49	1.00%
		50+	1.00%

Disability Rates

The disability rates for the plan are outlined in the table below. 90% of the disabilities are assumed to be service-related.

Age	Rate	Age	Rate	Age	Rate
20	0.10%	35	0.35%	50	1.00%
21	0.10%	36	0.38%	51	1.10%
22	0.10%	37	0.41%	52	1.20%
23	0.10%	38	0.44%	53	1.30%
24	0.10%	39	0.47%	54	1.40%
25	0.10%	40	0.50%	55	1.50%
26	0.10%	41	0.53%	56	2.00%
27	0.14%	42	0.56%	57	2.25%
28	0.14%	43	0.59%	58	2.50%
29	0.14%	44	0.62%	59	2.75%
30	0.14%	45	0.65%	60	3.00%
31	0.20%	46	0.68%	61	3.25%
32	0.23%	47	0.71%	62	3.50%
33	0.26%	48	0.74%	63	3.75%
34	0.29%	49	0.77%	64	4.00%
				65+	4.25%

Salary Increases

The salary increases for the plan are as follows:

Service	Salary Increase	Service	Salary Increase	Service	Salary Increase
0	12.00%	10	5.00%	20	5.00%
1	11.00%	11	5.00%	21	5.00%
2	10.00%	12	5.00%	22	5.00%
3	8.50%	13	5.00%	23	5.00%
4	7.50%	14	5.00%	24	5.00%
5	6.50%	15	5.00%	25	5.00%
6	5.00%	16	5.00%	26	4.50%
7	5.00%	17	5.00%	27	4.50%
8	5.00%	18	5.00%	28	4.50%
9	5.00%	19	5.00%	29	4.50%
				30+	4.00%

Payroll Growth

4.5% per year

Marital Status

80% of Members are assumed to be married.

Spouse's Age

Males are assumed to be three years older than females

Tier 2 Cost-of-Living Adjustment

1.25%