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OPEN SESSION

NOTICE OF REGULAR BOARD MEETING JOSEPH W. CLARK, CHAIRMAN

AGENDA

**THURSDAY, JUNE 22, 2017
1:00 PM**

1:00 PM ROLL CALL

APPROVAL OF SPECIAL BOARD MEETING MINUTES FOR MAY 12, 2017

APPROVAL OF MEETING MINUTES FOR MAY 18, 2017

CHAIR'S COMMENTS

INTERIM EXECUTIVE DIRECTOR'S REPORT

- REPORT ON FY 2017 INTERIM FINANCIAL STATEMENTS BY ANTHONY SHELBORNE, CFO
- UPDATE ON PENSION INFORMATION MANAGEMENT SYSTEM (PIMS) PROGRAM BY LINEA SOLUTIONS (**CLOSED SESSION**)

INVESTMENT COMMITTEE REPORT -- ACTION ITEMS

OPERATIONS COMMITTEE REPORT -- ACTION ITEMS

- PRESENTATION: ACTUARIAL EXPERIENCE STUDY RESULTS AND RECOMMENDATIONS BY CAVANAUGH MACDONALD LLC

BENEFITS COMMITTEE REPORT -- ACTION ITEMS

LEGISLATIVE COMMITTEE REPORT -- ACTION ITEM

AUDIT COMMITTEE REPORT -- ACTION ITEM

OTHER BUSINESS

2:30 PM ADJOURNMENT

ADDITIONAL MEETING MATERIALS

- ORGANIZATIONAL CHART
- CONFERENCES & MEETINGS LISTING
- TRUSTEES & STAFF TRAINING AND TRAVEL REPORT

DISTRICT OF COLUMBIA RETIREMENT BOARD

+ + + + +

SPECIAL BOARD MEETING

+ + + + +

OPEN SESSION

+ + + + +

FRIDAY
MAY 12, 2017

+ + + + +

The Board met in the DCRB Boardroom,
900 7th Street, NW, Washington, D.C., at 10:00
a.m., Joseph W. Clark, Chairman, presiding.

PRESENT

JOSEPH W. CLARK, Chairman
GARY W. HANKINS, Vice Chairman/Secretary
LYLE M. BLANCHARD, Treasurer
JANICE ADAMS
JOSEPH M. BRESS
MARY A. COLLINS
EDWARD C. SMITH*
MICHAEL J. WARREN
LENDIA P. WASHINGTON

ALSO PRESENT

SHEILA MORGAN-JOHNSON
DEBORAH REAVES
ERIE F. SAMPSON
VERNON VALENTINE

1 P-R-O-C-E-E-D-I-N-G-S

2 10:21 a.m.

3 MS. REAVES: Today is May 12th, 2017.

4 This is the meeting of the DCRB Retirement Board.

5 This is a special board meeting. Trustees in

6 attendance are Chairman Clark, Trustee Hankins,

7 Trustee Adams, Trustee Bress, Trustee Warren,

8 Trustee Collins and Trustee Washington.

9 Others that will be in attendance at

10 this meeting is Allegra Chilstrom from Neal Gross

11 & Company Court Reporters and Transcribers. That

12 concludes attendance.

13 CHAIRMAN CLARK: Would you also

14 include --

15 MS. REAVES: Oh, sorry. And Trustee

16 Ed Smith is on the phone.

17 CHAIRMAN CLARK: All right. Good

18 morning to all. Today is Friday, May 12TH, 2017.

19 I'm calling to order this special meeting of the

20 District of Columbia Retirement Board.

21 The purpose of this meeting is to

22 discuss a personnel matter pursuant to D.C. Code

1 Section 257(b)(10). At this moment, I will hear
2 a motion to go into closed session.

3 MR. HANKINS: So moved.

4 MS. COLLINS: Second. Mary Collins.

5 MR. HANKINS: And moved by Gary
6 Hankins.

7 CHAIRMAN CLARK: Gary Hankins has
8 moved that we go onto closed session, properly
9 seconded by Trustee Collins. Is there any
10 unreadiness?

11 Seeing none, all those in favor say
12 aye.

13 (Chorus of aye.)

14 CHAIRMAN CLARK: The record will
15 reflect that each trustee has responded aye.
16 Those who are opposed, nay?

17 (No response.)

18 CHAIRMAN CLARK: The ayes have it and
19 we are now in closed session.

20 (Whereupon, the above-entitled matter
21 went off the record at 10:22 a.m. and resumed at
22 12:14 p.m.)

1 CHAIRMAN CLARK: The Chair would now
2 entertain a motion to adjourn.

3 MR. BRESS: I move.

4 MR. HANKINS: Second. Gary Hankins.

5 CHAIRMAN CLARK: So moved by Trustee
6 Bress, seconded by Trustee Hankins.

7 Any unreadiness? Seeing none, all
8 those in favor say aye.

9 (Chorus of aye.)

10 CHAIRMAN CLARK: Opposed, same
11 privilege?

12 (No response.)

13 CHAIRMAN CLARK: We are out of closed
14 session and we adjourn.

15 (Whereupon, the above-entitled matter
16 went off the record at 12:15 p.m.)

17

18

19

20

21

22

A	Gary 1:13 3:5,7 4:4 Gross 2:10	properly 3:8 purpose 2:21 pursuant 2:22	0
a.m 1:10 2:2 3:21 above-entitled 3:20 4:15 Adams 1:14 2:7 adjourn 4:2,14 Allegra 2:10 attendance 2:6,9,12 aye 3:12,13,15 4:8,9 ayes 3:18	H Hankins 1:13 2:6 3:3,5 3:6,7 4:4,4,6 hear 3:1	Q	1
B	I include 2:14	R REAVES 1:18 2:3,15 record 3:14,21 4:16 reflect 3:15 Reporters 2:11 responded 3:15 response 3:17 4:12 resumed 3:21 Retirement 1:1 2:4,20	10:00 1:10 10:21 2:2 10:22 3:21 12 1:7 12:14 3:22 12:15 4:16 12th 2:3,18
BLANCHARD 1:13 board 1:1,3,9 2:4,5,20 Boardroom 1:9 Bress 1:14 2:7 4:3,6	J J 1:16 JANICE 1:14 Joseph 1:10,12,14	S SAMPSON 1:19 Second 3:4 4:4 seconded 3:9 4:6 Section 3:1 Seeing 3:11 4:7 session 1:5 3:2,8,19 4:14 SHEILA 1:18 Smith 1:15 2:16 sorry 2:15 special 1:3 2:5,19 Street 1:10	2 2017 1:7 2:3,18 257(b)(10) 3:1
C	K		3
C 1:15 calling 2:19 Chair 4:1 Chairman 1:10,12 2:6 2:13,17 3:7,14,18 4:1 4:5,10,13 Chairman/Secretary 1:13 Chilstrom 2:10 Chorus 3:13 4:9 Clark 1:10,12 2:6,13,17 3:7,14,18 4:1,5,10,13 closed 3:2,8,19 4:13 Code 2:22 Collins 1:15 2:8 3:4,4,9 Columbia 1:1 2:20 Company 2:11 concludes 2:12 Court 2:11	L LENDIA 1:16 LYLE 1:13		4
	M M 1:13,14 Mary 1:15 3:4 matter 2:22 3:20 4:15 meeting 1:3 2:4,5,10,19 2:21 met 1:9 MICHAEL 1:16 moment 3:1 MORGAN-JOHNSON 1:18 morning 2:18 motion 3:2 4:2 move 4:3 moved 3:3,5,8 4:5		5
	N nay 3:16 Neal 2:10 NW 1:10	T Today 2:3,18 Transcribers 2:11 Treasurer 1:13 trustee 2:6,7,7,7,8,8,15 3:9,15 4:5,6 Trustees 2:5	6
D	O OPEN 1:5 opposed 3:16 4:10 order 2:19	U unreadiness 3:10 4:7	7
DEBORAH 1:18 discuss 2:22 District 1:1 2:20	P P 1:16 P-R-O-C-E-E-D-I-N-G-S 2:1 p.m 3:22 4:16 personnel 2:22 phone 2:16 PRESENT 1:12,17 presiding 1:10 privilege 4:11	V VALENTINE 1:19 VERNON 1:19 Vice 1:13	7th 1:10
E		W W 1:10,12,13 Warren 1:16 2:7 Washington 1:10,16 2:8 went 3:21 4:16	8
Ed 2:16 EDWARD 1:15 entertain 4:2 ERIE 1:19		X	9
F		Y	900 1:10
F 1:19 favor 3:11 4:8 Friday 1:7 2:18		Z	
G			

C E R T I F I C A T E

This is to certify that the foregoing transcript

In the matter of: Special Board Meeting
Open Session

Before: DC Retirement Board

Date: 05-12-17

Place: Washington, DC

was duly recorded and accurately transcribed under
my direction; further, that said transcript is a
true and accurate record of the proceedings.



Court Reporter

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DISTRICT OF COLUMBIA RETIREMENT BOARD
BOARD MEETING MINUTES
MAY 18, 2017
1:00 P.M.

MEMBERS PRESENT

Joseph W. Clark, Chair
Janice M. Adams
Lyle M. Blanchard*
Joseph M. Bress
Mary A. Collins
Gary W. Hankins
Edward C. Smith
Thomas N. Tippet
Lenda P. Washington
Michael J. Warren
Jeffrey Barnette, ex officio

*Arrived after roll call.

DCRB STAFF PRESENT

Sheila Morgan-Johnson, Interim Executive Director
Erie Sampson
Johnetta Bond
Anthony Shelborne
Peter Dewar
Joan Passerino
Leslie King
Adina Dorch
Daniel Hernandez
Vernon Valentine
Deborah Reaves
Katie Schultz
Johniece Harris
Wukyanos Gebremeskel

MEMBERS NOT PRESENT

Darrick O. Ross
Nathan A. Saunders

ROLL CALL

Chairman Clark called the meeting to order at 1:55 p. m. and Ms. Deborah Reaves called the roll.

APPROVAL OF MINUTES

Chairman Clark introduced a motion to approve the April Board meeting minutes.

Motion #1: To approve the April 20, 2017 Board meeting minutes.

The motion was moved by Trustee Hankins and properly seconded by Trustee Bress. The motion was approved (9-0, with one abstention). (*See Tally #1*)

CHAIRMAN'S COMMENTS

Chairman Clark commented on the following topics:

Committee Assignments for 2017

Appointments for standing committee Chairs, Vice-Chairs and members will be completed by the end of this month. An announcement will be sent out via email with an updated committee list.

FY 2016 Comprehensive Annual Financial Report (CAFR)

The CAFR for the fiscal year ended September 30, 2016 has been posted to the DCRB website. The report can be accessed under Publications and Reports.

Recent Cyber Security Issues

Over the past week, a massive global ransomware attack, called; ‘WannaCry,’ has disabled hundreds of thousands of computers in hospitals, police departments, public utilities, companies, and government offices across more than 150 countries. Ransomware is a virus that infects a computer, encrypts its files, and denies the user access until a ransom is paid to the attacker. There have been no breaches to DCRB’s systems.

Trustee Training

Trustees Janice Adams and Nathan Saunders attended the Wharton School of the University of Pennsylvania’s Investment Portfolio Concepts in Management course in Philadelphia on May 1 - 4. Also, trustees who may have missed the training last month on the District’s Open Meetings Act and the annual mandatory training on Fiduciary Principles should listen to the audio link prior to the June Board meeting. The required annual Ethics training has been rescheduled for that meeting.

Trustee Janice Adams Receives Recognition for Excellence and Philanthropy

The May/June edition of *Minority Enterprise Advocate* contains an article about Trustee Janice Adams and her company, JMA Solutions, LLC (JMA). The article provides information on Trustee Adams’ background, recounts how she built her business, and references recent awards. In 2016, JMA received the DC Chamber of Commerce “Community Impact Award” and a Washington Post “Top Work Place” Award. The article indicates that JMA is a model of excellence and philanthropy.

Contracts Audit

A project will soon be initiated to audit all active DCRB contracts. The purpose of the audit is to identify efficiencies and cost savings, to minimize risk, and to assure that vendors and contractors (and any subcontractors) have properly vetted their employees. This project will be overseen by the Audit Committee.

PIMS RFP

At the June Board meeting, DCRB’s Pension Information Management System (PIMS) oversight consultant will be providing the Board with a review of the PIMS Request For Proposal (RFP). It will also be asked to give the Board an update on the projected costs of acquiring and implementing the PIMS, and to identify how the Board can insert cost controls that will keep the project on time and within budget.

INTERIM EXECUTIVE DIRECTOR’S REPORT

Interim Executive Director, Sheila Morgan-Johnson, referred Trustees to her written report and provided the following comments:

Budget Hearing Responses

On May 10, 2017, DCRB responded to questions D.C. Council Chairman Mendelson asked during our Budget Hearing testimony of April 11, 2017.

Classification & Compensation Study

On May 10, 2017, DCRB's Executive Leadership Team and project working group met with the project consultants to kick-off a Classification and Compensation Study that will be completed in the fall. In addition to discussing DCRB's compensation philosophy and current practices with staff, the consultants will be seeking input from Trustees at the June Operations Committee meeting.

Benefits Overview for New FEMS Recruits

On April 27, 2017, DCRB's Benefits Department staff provided new D.C. Fire and Emergency Medical Services (FEMS) recruits with an overview of the Police/Fire Retirement Plan. The presentation, which was held at the D.C. Fire & EMS Training Academy, was very well received and will be offered to future recruits.

Spring Newsletter

DCRB's spring newsletter is being printed and will be distributed to all members beginning next week. This newsletter serves primarily as the Summary Annual Report to members of the financial health of the Teachers' and Police/Fire Retirement Plans.

Organizational Design and Metrics

DCRB has begun a project involving organizational design, goal setting and metrics to address staffing questions as the agency develops and implements the PIMS. The project will also identify metrics that will allow DCRB to make meaningful comparisons of its administrative activities to an appropriate peer group, as well as determine the cost of administration activities per Plan member.

Washington Post Article

An April 29, 2017 *Washington Post* article reported that "hundreds of DC Government employees' paychecks" were affected by an error where FICA (Social Security) withholdings were omitted. Since the District's firefighters, police officers and teachers do not participate in Social Security, our members would not have been affected. DCHR has contacted the IRS and the Social Security Administration about this issue and is working to make employees whole.

There followed a short discussion about the potential effect of coding and data entry issues on pension plan and health care participation.

INVESTMENT COMMITTEE REPORT

Committee Chair Warren presented the following motions from the May 18, 2017 Investment Committee meeting:

Motion #2: To commit up to \$40 million to Wellspring Capital Partners VI, L.P., private equity, subject to contract negotiations.

The motion was moved by Trustee Warren and properly seconded by Trustee Tippet. The motion was approved (9-0, with one abstention). (*See Tally #2*)

Motion #3: To accept the proposed changes to the Investment Committee Charter as amended.

The motion was moved by Trustee Warren and properly seconded by Trustee Tippet. The motion was approved (9-0, with one abstention). (*See Tally #3*)

Motion #4: To enter into a one year contract with Zeno Consulting Group subject to the same terms and conditions, and to launch a search for a transaction cost consultant before the end of the calendar year.

The motion was moved by Trustee Warren and properly seconded by Trustee Tippet. The motion was approved 9-0, with one abstention). (*See Tally #4*)

OPERATIONS COMMITTEE REPORT

Committee Chair Collins indicated that there is no report, since the Operations Committee did not meet this month. She stated that there will be a meeting in June to discuss the results of the Actuarial Experience Study.

BENEFITS COMMITTEE REPORT

Committee Chair Smith stated that the Benefits Committee did not meet in April and highlighted the following activities:

Annual Estimated Benefit Statement Project

Estimated Benefit statements were mailed to approximately 1,700 active FEMS Plan members last month. One issue involving service dates caused a delay in sending out approximately 300 statements. Benefits Department staff met with DCHR to discuss this issue with a special project team that is developing a standard operating procedures manual for District-wide retirement data.

Disability Income Review Project

In April, the Benefits Department began its 2016 Annual Disability Earned Income Verification Project. Under the District of Columbia Police Officers and Firefighters' Retirement Plan, disability annuitants under the age of 50 are subject to annual earned income reporting for the prior calendar year to determine if their annuity should be terminated, reduced or reinstated.

Term Vested Project Update

DCRB is continuing to work with US Treasury's Office of DC Pensions to complete a project for locating terminated vested Plan participants. The purpose of this project is to: 1) identify former members who terminated employment prior to retirement eligibility, and 2) build a database to track these members to ensure they receive either a refund of their contributions or a deferred retirement annuity.

FileNet Upgrade

This Release will update and correct the Document Type and Subtype in FileNet assigned to each document, identify when documents contain an original seal (e.g., marriage certificate), and eliminate the need to manually insert separator pages when documents are scanned.

STAR 9.2 Release

STAR Release 9.2 was successfully completed in April. This Release restored many favorable features that had been eliminated previously, and added patches, fixes and tax updates.

Committee Chair Smith then pointed out the average processing time (60, 53, and 52 days) for the months of February through April 2017, and referred Trustees to the written report for additional information and metrics.

LEGISLATIVE COMMITTEE REPORT

Committee Chair Blanchard referred Trustees to the written report and provided information of the following:

“Diversity in Fund Management Amendment Act of 2017” (B22-0286)

The bill amends the Police Officers, Fire Fighters, and Teachers Retirement Benefit Replacement Plan Act of 1998 to require DCRB to report annually on the affirmative steps it has taken to hire diverse fund managers. The bill was introduced on May 16, 2017, by Councilmembers McDuffie and White, and referred to the Committee of the Whole.

There followed a discussion about the standards, criteria and process currently in place when considering investment managers, and the Board’s fiduciary obligations to the members.

AUDIT COMMITTEE REPORT

Committee Chair Hankins indicated that there was no report, since there was no meeting this month. He did state, however, that there would be a meeting on June 22, 2017.

OTHER BUSINESS

None

ADJOURNMENT

Chairman Clark introduced a motion to adjourn the meeting.

Motion #5: To adjourn the meeting at 2:52 p.m.

The motion was moved by Trustee Tippet and properly seconded by Trustee Bress. The motion was approved (10–0). *(See Tally #6)*

**DISTRICT OF COLUMBIA RETIREMENT BOARD
RECORD OF OFFICIAL BOARD ACTIONS**

Tally #1:			Date May 18, 2017		
To approve the April 20, 2017 Board meeting minutes.					
Members	Aye	Nay/ Oppose	No Vote/ Abstain	No Vote/ Recuse	Absent
Clark, Joseph W., Chair	√				
Adams, Janice M.	√				
Blanchard, Lyle	√				
Bress, Joseph M.	√				
Collins, Mary A.			√		
Hankins, Gary W.	√				
Ross, Darrick O.					√
Saunders, Nathan					√
Smith, Edward C.	√				
Tippett, Thomas N.	√				
Warren, Michael J.	√				
Washington, Lenda P.	√				

Tally #2:		Date May 18, 2017			
To commit up to \$40 million to Wellspring Capital Partners VI, L.P., private equity, subject to contract negotiations.					
Members	Aye	Nay/ Oppose	No Vote/ Abstain	No Vote/ Recuse	Absent
Clark, Joseph W., Chair	√				
Adams, Janice M.	√				
Blanchard, Lyle			√		
Bress, Joseph M.	√				
Collins, Mary A.	√				
Hankins, Gary W.	√				
Ross, Darrick O.					√
Saunders, Nathan					√
Smith, Edward C.	√				
Tippett, Thomas N.	√				
Warren, Michael J.	√				
Washington, Lenda P.	√				

Tally #3:		Date: May 18, 2017			
To accept the proposed changes to the Investment Committee Charter as amended.					
Members	Aye	Nay/ Oppose	No Vote/ Abstain	No Vote/ Recuse	Absent
Clark, Joseph W., Chair	√				
Adams, Janice M.	√				
Blanchard, Lyle			√		
Bress, Joseph M.	√				
Collins, Mary A.	√				
Hankins, Gary W.	√				
Ross, Darrick O.					√
Saunders, Nathan					√
Smith, Edward C.	√				
Tippett, Thomas N.	√				
Warren, Michael J.	√				
Washington, Lenda P.	√				

Tally #4:		Date: April 20, 2017			
To enter into a one year contract with Zeno Consulting Group subject to the same terms and conditions, and to launch a search for a transaction cost consultant before the end of the calendar year.					
Members	Aye	Nay/ Oppose	No Vote/ Abstain	No Vote/ Recuse	Absent
Clark, Joseph W., Chair	√				
Adams, Janice M.	√				
Blanchard, Lyle			√		
Bress, Joseph M.	√				
Collins, Mary A.	√				
Hankins, Gary W.	√				
Ross, Darrick O.					√
Saunders, Nathan					√
Smith, Edward C.	√				
Tippett, Thomas N.	√				
Warren, Michael J.	√				
Washington, Lenda P.	√				

Tally #5:		Date: May 18, 2017			
To adjourn the meeting at 2:52 p.m.					
Members	Aye	Nay/ Oppose	No Vote/ Abstain	No Vote/ Recuse	Absent
Clark, Joseph W., Chair	√				
Adams, Janice M.	√				
Blanchard, Lyle	√				
Bress, Joseph M.	√				
Collins, Mary A.	√				
Hankins, Gary W.	√				
Ross, Darrick O.					√
Saunders, Nathan					√
Smith, Edward C.	√				
Tippett, Thomas N.	√				
Warren, Michael J.	√				
Washington, Lenda P.	√				

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CHAIRMAN'S REPORT

June 22, 2017

TOPIC	UPDATE
Committee Assignments for 2017	<p>The following Trustees will serve as Chairs and Vice Chairs to the Board's standing committees through this year:</p> <ul style="list-style-type: none"> • Audit Committee: Chair, Gary Hankins; Vice Chair, Joseph Bress. • Benefits Committee: Chair, Mary Collins; Vice Chair, Nathan Saunders. • Fiduciary Committee: Chair, Lenda Washington; Vice Chair, Lyle Blanchard. • Investment Committee: Chair, Michael Warren; Vice Chair, Lenda Washington. • Legislative Committee: Chair, Lyle Blanchard; Vice Chair, Nathan Saunders. • Operations Committee: Chair, Edward Smith; Vice Chair, Joseph Bress. <p>Members of the committees are indicated in the attached DCRB Trustee Committees List for 2017.</p>
Trustee Training	<p>Trustees who missed the training in April on the District's Open Meetings Act and the annual mandatory training on Fiduciary Principles should have listened to the audio link prior to today's meeting. Also, given the very full schedule and three meetings today, the Ethics training that was to take place today has been deferred to September. You should also be aware that Trustees will receive cybersecurity and privacy training when Board meetings resume in the fall.</p>
Meeting With Council Chairman Mendelson	<p>I have asked the Legislative Committee Chair to set up a meeting with Council Chairman Mendelson to discuss DCRB's independent compensation limitations, the Diversity in Fund Management legislation, and various technical amendments to the Plans. The goal is to meet with him before the July 15 recess.</p>
PIMS RFP	<p>As noted last month, we have invited Linea Solutions (Linea), our Pension Information Management System (PIMS) oversight consultant, to provide the Board today with a review of the PIMS Request For Proposal (RFP) prior to its release. The review, which will be held in closed session, will provide an overview of the RFP, and the projected costs of acquiring, implementing, and maintaining it.</p>
Resolutions Reappointing Trustees Blanchard and Warren	<p>Attached for your information are copies of Council Resolutions reappointing Trustees Lyle Blanchard and Michael Warren to the Board.</p>

Other	<p>As a reminder:</p> <ul style="list-style-type: none">➤ In accordance with a provision in the Trustee Travel Policy, following your attendance at a conference, trustees are asked to complete a report describing what they learned at the conference and its benefit to the Board. Section 4 of the Conference Travel Report for Trustees and Staff form provides space for you to list your ideas and insights gained at the conference.➤ Notice should be provided to the Chairman and to DCRB staff if you plan to participate at a meeting electronically. The IT staff will provide WebEx information prior to every meeting. <p>For your information:</p> <ul style="list-style-type: none">➤ An incident response presentation will be provided to the Board in September.➤ There will be no Board meeting during the months of July or August.
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 DC RETIREMENT BOARD TRUSTEE COMMITTEES LIST As of June 22, 2017			
AUDIT	BENEFITS	FIDUCIARY	INVESTMENTS
Gary W. Hankins, Chair	Mary Collins, Chair	Lenda Washington, Chair	Michael J. Warren, Chair
Joseph M. Bress, Vice Chair	Nathan Saunders, Vice Chair	Lyle M. Blanchard	Lenda Washington, Vice Chair
Jan Adams	Darrick Ross	Michael J. Warren	Jan Adams
Lenda P. Washington	Edward Smith	Joseph W. Clark, Ex-Officio	Lyle M. Blanchard
Joseph Clark, Ex-Officio	Joseph Clark, Ex-Officio		Joseph M. Bress
			Joseph W. Clark
			Mary A. Collins
			Gary W. Hankins
			Darrick O. Ross
			Nathan A. Saunders
			Edward C. Smith
			Thomas N. Tippet
			Jeffrey Barnette, Ex-Officio
LEGISLATIVE	OPERATIONS		
Lyle M. Blanchard, Chair	Edward Smith, Chair		
Nathan A. Saunders	Joseph M. Bress, Vice Chair		
Michael J. Warren	Jan Adams		
Joseph W. Clark, Ex-Officio	Gary W. Hankins		
	Joseph W. Clark, Ex-Officio		

NOTE: Chairman Joseph W. Clark, is an ex-officio member of every standing committee, except for the Investment Committee. The Investment Committee is a Committee of the Whole. Trustees can only serve on three (3) Committees.

Approved by Board Chairman on June 2017.

Joseph W. Clark



COUNCIL OF THE DISTRICT OF COLUMBIA
THE JOHN A. WILSON BUILDING
1350 PENNSYLVANIA AVENUE, N.W.
WASHINGTON, D.C. 20004

May 11, 2017

Joseph Clark, Chairperson
District of Columbia Retirement Board
900 7th Street, N.W., 2nd Floor
Washington, D.C. 20001

Dear Mr. Clark:

Enclosed is a copy of Council Resolution 22-48, the "District of Columbia Retirement Board Lyle M. Blanchard Reappointment Resolution of 2017," adopted by the Council at the April 4, 2017 Legislative Meeting.

If you have any questions regarding this resolution, please contact Nyasha Smith, Secretary to the Council, at 202-724-8080 or nsmith@dccouncil.us.

Sincerely,

A handwritten signature in black ink, appearing to read "Phil Mendelson".

Phil Mendelson
Chairman of the Council

enc.



ENROLLED ORIGINAL

A RESOLUTION

22-48

IN THE COUNCIL OF THE DISTRICT OF COLUMBIA

April 4, 2017

To reappoint Mr. Lyle M. Blanchard to the District of Columbia Retirement Board.

RESOLVED, BY THE COUNCIL OF THE DISTRICT OF COLUMBIA, That this resolution may be cited as the "District of Columbia Retirement Board Lyle M. Blanchard Reappointment Resolution of 2017".

Sec. 2. The Council of the District of Columbia reappoints:

Mr. Lyle M. Blanchard
5609 32nd Street, N.W.
Washington, D.C. 20015
(Ward 4)

as a member of the District of Columbia Retirement Board, established by section 121 of the District of Columbia Retirement Reform Act, approved November 17, 1979 (93 Stat. 869; D.C. Official Code § 1-711), for a 4-year term to end January 27, 2021.

Sec. 3. The Council of the District of Columbia shall transmit a copy of this resolution, upon its adoption, to the appointee, the chairperson of the District of Columbia Retirement Board, and the Office of the Mayor.

Sec. 4. This resolution shall take effect immediately upon the first date of publication in the District of Columbia Register.



**COUNCIL OF THE DISTRICT OF COLUMBIA
WASHINGTON, D.C. 20004**

Docket No. **PR22-77**☒ ITEM ON CONSENT CALENDAR☒ ACTION & DATE**ADOPTED FINAL READING, 04/04/2017**☒ VOICE VOTE

RECORDED VOTE ON REQUEST

APPROVED

ABSENT

☐ ROLL CALL VOTE - Result

Councilmember	Aye	Nay	NV	AB	Councilmember	Aye	Nay	NV	AB	Councilmember	Aye	Nay	NV	AB
Chmn. Mendelson	X				Gray	X				Todd	X			
Allen	X				Grosso	X				White, R.	X			
Bonds	X				McDuffie	X				White, T.				X
Cheh	X				Nadeau	X								
Evans	X				Silverman	X								
X - Indicate Vote					AB - Absent					NV - Present, Not Voting				

CERTIFICATION RECORD

Secretary to the Council

Date

☐ ITEM ON CONSENT CALENDAR☐ ACTION & DATE☐ VOICE VOTE

RECORDED VOTE ON REQUEST

ABSENT

☐ ROLL CALL VOTE - Result

Councilmember	Aye	Nay	NV	AB	Councilmember	Aye	Nay	NV	AB	Councilmember	Aye	Nay	NV	AB
Chmn. Mendelson					Gray					Todd				
Allen					Grosso					White, R				
Bonds					McDuffie					White, T				
Cheh					Nadeau									
Evans					Silverman									
X - Indicate Vote					AB - Absent					NV - Present, Not Voting				

CERTIFICATION RECORD

Secretary to the Council

Date

☐ ITEM ON CONSENT CALENDAR☐ ACTION & DATE☐ VOICE VOTE

RECORDED VOTE ON REQUEST

ABSENT

☐ ROLL CALL VOTE - Result

Councilmember	Aye	Nay	NV	AB	Councilmember	Aye	Nay	NV	AB	Councilmember	Aye	Nay	NV	AB
Chmn. Mendelson					Gray					Todd				
Allen					Grosso					White, R				
Bonds					McDuffie					White, T				
Cheh					Nadeau									
Evans					Silverman									
X - Indicate Vote					AB - Absent					NV - Present, Not Voting				

CERTIFICATION RECORD

Secretary to the Council

Date



COUNCIL OF THE DISTRICT OF COLUMBIA
THE JOHN A. WILSON BUILDING
1350 PENNSYLVANIA AVENUE, N.W.
WASHINGTON, D.C. 20004

May 11, 2017

Joseph Clark, Chairperson
District of Columbia Retirement Board
900 7th Street, N.W., 2nd Floor
Washington, D.C. 20001

Dear Mr. Clark:

Enclosed is a copy of Council Resolution 22-49, the "District of Columbia Retirement Board Michael J. Warren Reappointment Resolution of 2017," adopted by the Council at the April 4, 2017 Legislative Meeting.

If you have any questions regarding this resolution, please contact Nyasha Smith, Secretary to the Council, at 202-724-8080 or nsmith@dccouncil.us.

Sincerely,

A handwritten signature in black ink, appearing to read "Phil Mendelson".

Phil Mendelson
Chairman of the Council

enc.



ENROLLED ORIGINAL

A RESOLUTION

22-49

IN THE COUNCIL OF THE DISTRICT OF COLUMBIA

April 4, 2017

To reappoint Mr. Michael J. Warren to the District of Columbia Retirement Board.

RESOLVED, BY THE COUNCIL OF THE DISTRICT OF COLUMBIA, That this resolution may be cited as the "District of Columbia Retirement Board Michael J. Warren Reappointment Resolution of 2017".

Sec. 2. The Council of the District of Columbia reappoints:

Mr. Michael J. Warren
3215 35th Street, N.W.
Washington, D.C. 20016
(Ward 3)

as a member of the District of Columbia Retirement Board, established by section 121 of the District of Columbia Retirement Reform Act, approved November 17, 1979 (93 Stat. 869; D.C. Official Code § 1-711), for a 4-year term to end January 27, 2019.

Sec. 3. The Council of the District of Columbia shall transmit a copy of this resolution, upon its adoption, to the appointee, the chairperson of the District of Columbia Retirement Board, and the Office of the Mayor.

Sec. 4. This resolution shall take effect immediately upon the first date of publication in the District of Columbia Register.



**COUNCIL OF THE DISTRICT OF COLUMBIA
WASHINGTON, D.C. 20004**

Docket No. **PR22-78**☒ ITEM ON CONSENT CALENDAR☒ ACTION & DATE**ADOPTED FINAL READING, 04/04/2017**☒ VOICE VOTE

RECORDED VOTE ON REQUEST

APPROVED

ABSENT

☐ ROLL CALL VOTE - Result

Councilmember	Aye	Nay	NV	AB	Councilmember	Aye	Nay	NV	AB	Councilmember	Aye	Nay	NV	AB
Chmn. Mendelson	X				Gray	X				Todd	X			
Allen	X				Grosso	X				White, R.	X			
Bonds	X				McDuffie	X				White, T.				X
Cheh	X				Nadeau	X								
Evans	X				Silverman	X								

X - Indicate Vote

AB - Absent

NV - Present, Not Voting

CERTIFICATION RECORD

Secretary to the Council

Date

☐ ITEM ON CONSENT CALENDAR☐ ACTION & DATE☐ VOICE VOTE

RECORDED VOTE ON REQUEST

ABSENT

☐ ROLL CALL VOTE - Result

Councilmember	Aye	Nay	NV	AB	Councilmember	Aye	Nay	NV	AB	Councilmember	Aye	Nay	NV	AB
Chmn. Mendelson					Gray					Todd				
Allen					Grosso					White, R				
Bonds					McDuffie					White, T				
Cheh					Nadeau									
Evans					Silverman									

X - Indicate Vote

AB - Absent

NV - Present, Not Voting

CERTIFICATION RECORD

Secretary to the Council

Date

☐ ITEM ON CONSENT CALENDAR☐ ACTION & DATE☐ VOICE VOTE

RECORDED VOTE ON REQUEST

ABSENT

☐ ROLL CALL VOTE - Result

Councilmember	Aye	Nay	NV	AB	Councilmember	Aye	Nay	NV	AB	Councilmember	Aye	Nay	NV	AB
Chmn. Mendelson					Gray					Todd				
Allen					Grosso					White, R				
Bonds					McDuffie					White, T				
Cheh					Nadeau									
Evans					Silverman									

X - Indicate Vote

AB - Absent

NV - Present, Not Voting

CERTIFICATION RECORD

Secretary to the Council

Date

900 7th Street, NW, 2nd Floor
Washington, DC 20001
www.dcrb.dc.gov



Telephone (202) 343-3200
Facsimile (202) 566-5000
E-mail: dcrb@dc.gov

INTERIM EXECUTIVE DIRECTOR REPORT

June 22, 2017

Activities	Updates
CEM Benchmarking Project	DCRB has engaged CEM Benchmarking, Inc. to analyze benefits administration and financial data to compare our benefits operations against a peer group of state and municipal retirement systems. The comparative data includes administrative costs, transactional volumes, website capabilities, member calls, and other service measures. DCRB should have a report with the results of the analysis in a few months and CEM will present those results to the Board in September or October. We will also identify a vendor to measure comparable IT costs.
Organizational Design	As DCRB moves toward acquiring its own Pension Information Management System, the senior staff has been discussing the potential impact of that large and important project on the Agency, particularly as it applies to organizational structure and staffing levels. These discussions have included a review of our mission statement and, in line with our mission, we are planning to update our strategic plan and goals, recognizing DCRB's challenges and opportunities over the next five years and beyond.
Interim Financial Update	Attached for your information is a financial report reflecting expenditures against our budget for the period ending March 31, 2017. Anthony Shelborne, DCRB's Chief Financial Officer, will give you a short overview of this information following my Report.
Board and Committee Calendar	Attached for your information and planning purposes is a Board and Committee Calendar for 2017, identifying projected meeting dates, as well as potential action items. Please provide Deborah Reaves with any questions or changes. We will ask for your input again at the end of the year and provide you with an update in January for calendar year 2018.
Recycling Policy	For your information, District law requires the recycling of cans, bottles, mixed paper and cardboard. In that regard, the D.C. Department of Public Works performs periodic inspections of our building (including DCRB's suite) to ensure DC recycling laws are being followed; if not, we can be penalized up to \$2,000 for non-compliance. We have reviewed the recycling receptacles throughout our suite and relabeled them, where necessary, to assure the right materials are placed in them. Deborah Reaves should be contacted with any questions you may have.
Staff Appreciation Day	DCRB's annual Staff Appreciation Day will be held in our offices in August. As in the past, this annual event is funded by the DCRB senior staff. An email message will be sent out as soon as the date and location are identified. Trustees who have the time available are invited to join us.
Staffing Changes That Occurred Since	<p>Hires</p> <p><u>Dylan Meagher</u>, who completed an internship in the Benefits Department in May, joined DCRB on June 1, 2017, as a Member Service Representative.</p>

<p>the Last Board Meeting</p>	<p>Dylan, who speaks fluent Spanish, earned a Bachelor of Arts in Psychology in May 2016 and a Master of Science degree in Business Analysis in May of this year.</p> <p><u>Karl Middleton</u> came to DCRB initially on a contract basis as a Senior Contract Specialist on December 7, 2016 and became an employee on June 6, 2017. Karl has over 25 years of experience in the area of contracts and procurement, gained primarily from federal projects with companies in the DC region, Texas, New Mexico and in Iraq. He has a Bachelor of Business Administration degree with a concentration in Computer Information Systems, a Masters in Information Systems, and seven years of service in the U.S. Marine Corps.</p> <p><u>Alisha Pugh</u> , who joined the Benefits Department as a Member Services Representative on June 5, 2017, served as a Customer Relations Specialist for the Pension Benefit Guaranty Corporation, and also worked in communications and as a customer liaison at BET Networks, PBS Kids Associates and NPR. Alisha holds a Bachelor of Science degree in Communication and Media Studies and a Masters in Business Administration.</p>
<p>Recent Retirement-Related Articles (attached)</p>	<p>“Public Pension Assets: Quarterly Update (Q4 2016),” <u>National Association of State Retirement Administrators</u>, 2017.</p> <p>“Pensionomics 2016: Measuring the Economic Impact of DB Pension Expenditures,” <u>National Institute on Retirement Security</u>, District of Columbia, Maryland, and Virginia, 2017.</p> <p>“Why Pensions Matter: The History of Defined Benefit Pension Plans in the United States of America,” <u>National Public Pension Coalition</u>, Tyler Bond, March 2017.</p>



Teachers' and
Police Officers and Firefighters'
Retirement Fund



Interim Financial Statements and Schedules

Fiscal Year 2017



SCHEDULES OF ADMINISTRATIVE EXPENSES

As of April 30, 2017 and 2016

	2017	2016
Personal services		
Salaries	\$3,612,953	\$3,220,889
Fringe benefits	890,838	625,751
Total personal services	4,503,792	3,846,640
Non-personal services		
Office supplies	66,229	65,731
Telephone	55,530	47,868
Rent	1,171,034	1,128,362
Travel	124,691	106,541
Professional fees	2,411,214	2,874,676
Postage	51,770	20,589
Printing	6,575	34,683
Insurance	134,599	122,405
Dues & memberships	39,441	39,418
Audit costs	57,120	47,500
Actuarial fees	97,629	165,383
Legal fees	293,584	230,440
Investment fees	7,703,676	6,386,854
Contractual services (STAR)	933,263	884,229
Equipment and rental	226,519	277,053
Depreciation	-	-
Total non-personal services	13,372,874	12,431,732
Total administrative expenses	\$17,876,666	\$16,278,372

SCHEDULES OF ADMINISTRATIVE EXPENSES

As of March 31, 2017 and 2016

	2017	2016
Personal services		
Salaries	\$2,895,703	\$2,854,369
Fringe benefits	730,349	529,490
Total personal services	<u>3,626,052</u>	<u>3,383,860</u>
Non-personal services		
Office supplies	56,970	57,451
Telephone	48,930	40,446
Rent	1,025,030	999,915
Travel	102,722	90,760
Professional fees	2,172,163	2,239,964
Postage	44,169	10,623
Printing	6,575	31,080
Insurance	134,599	122,405
Dues & memberships	38,991	38,328
Audit costs	49,570	47,500
Actuarial fees	97,629	153,623
Legal fees	211,588	178,239
Investment fees	7,652,009	5,278,304
Contractual services (STAR)	933,263	884,229
Equipment and rental	222,962	254,081
Depreciation	-	-
Total non-personal services	<u>12,797,170</u>	<u>10,426,948</u>
Total administrative expenses	<u><u>\$16,423,222</u></u>	<u><u>\$13,810,808</u></u>

STATEMENTS OF FIDUCIARY NET POSITION

As of March 31, 2017 and 2016

	2017	2016	Percent Change
Assets			
Cash and short-term investments	\$51,031	\$204,297	-75.0%
Receivables	8,108	3,865	109.8%
Investments	7,235,140	6,266,890	15.5%
Collateral from securities lending	-	-	-
Total assets	<u>7,294,279</u>	<u>6,475,052</u>	<u>12.7%</u>
Liabilities			
Other payables	13,107	3,784	246.4%
Investment commitments payable	8,785	5,087	72.7%
Obligations under securities lending	<u>-</u>	<u>-</u>	<u>-</u>
Total liabilities	<u>21,892</u>	<u>8,871</u>	<u>146.8%</u>
Net Position Restricted For Pensions	<u><u>\$7,272,387</u></u>	<u><u>\$6,466,181</u></u>	<u><u>12.5%</u></u>

**DISTRICT OF COLUMBIA
TEACHERS' AND POLICE OFFICERS AND FIREFIGHTERS'
RETIREMENT FUND
COMBINING STATEMENTS OF FIDUCIARY NET POSITION
As of March 31, 2017 and 2016
(Dollar amounts in thousands)**

	2017			2016		
	Teachers' Retirement Fund	Police Officers and Firefighters' Retirement Fund	Total	Teachers' Retirement Fund	Police Officers and Firefighters' Retirement Fund	Total
ASSETS						
Cash and short term investments	13,375	37,657	51,031	55,276	149,021	204,297
Receivables:						
Federal Government	389	1,032	1,421	643	1,636	2,279
Investment sales proceeds	1,783	4,878	6,661	327	884	1,211
Interest & dividends	2	6	8	101	274	375
Employee contributions	0	0	0	0	0	0
Contribution receivable - D.C.	18	0	18	0	0	0
Total receivables	2,192	5,916	8,108	1,071	2,794	3,865
Prepaid expenses	0	0	0	0	0	0
Investments at fair value:						
Domestic equity	542,942	1,484,998	2,027,940	480,937	1,301,204	1,782,141
International equity	610,336	1,669,328	2,279,664	505,631	1,368,013	1,873,644
Fixed income	531,155	1,452,760	1,983,915	483,762	1,308,845	1,792,607
Real estate	132,481	362,350	494,831	116,597	315,460	432,057
Private equity	120,155	328,635	448,790	104,287	282,154	386,441
Total investments at fair value	1,937,069	5,298,071	7,235,140	1,691,214	4,575,676	6,266,890
Collateral from securities lending transactions at fair value	0	0	0	0	0	0
Capital assets	1	(1)	0	1	(1)	0
Total assets	1,952,637	5,341,643	7,294,279	1,747,562	4,727,490	6,475,052
LIABILITIES						
Accounts payable and other liabilities	1,894	5,164	7,058	397	1,071	1,468
Due to Federal Government	122	331	453	148	396	544
Due to District of Columbia Government	1,504	4,092	5,596	483	1,289	1,772
Investment commitments payable	2,352	6,433	8,785	1,373	3,714	5,087
Obligations under securities lending	0	0	0	0	0	0
Total liabilities	5,873	16,019	21,892	2,400	6,471	8,871
NET POSITION HELD IN TRUST FOR PENSION BENEFITS	\$1,946,764	\$5,325,624	\$7,272,387	\$1,745,161	\$4,721,020	\$6,466,181

STATEMENTS OF CHANGES IN FIDUCIARY NET POSITION

For the periods ending March 31, 2017 and 2016

	2017	2016	Percent Change
Additions			
Employer contributions	\$202,412	\$180,584	12.1%
Plan member contributions	25,994	28,430	-8.6%
Net investment income (loss)	358,047	207,172	72.8%
Other income	1,548	2,028	-23.7%
Total additions (reductions)	588,001	418,214	40.6%
Deductions			
Benefit payments	79,641	71,747	11.0%
Refunds	4,354	4,861	-10.4%
Administrative expenses	8,195	8,061	1.7%
Total deductions	92,190	84,669	8.9%
Change In Net Position	\$495,811	\$333,545	48.6%

**DISTRICT OF COLUMBIA
TEACHERS' AND POLICE OFFICERS AND FIREFIGHTERS'
RETIREMENT FUND
COMBINING STATEMENTS OF CHANGES IN FIDUCIARY NET POSITION
For the periods ending March 31, 2017 and 2016
(Dollar amounts in thousands)**

	2017			2016		
	Teachers' Retirement Fund	Police Officers and Firefighters' Retirement Fund	Total	Teachers' Retirement Fund	Police Officers and Firefighters' Retirement Fund	Total
ADDITIONS						
Contributions:						
Employer (District)	\$56,781	\$145,631	\$202,412	\$44,469	\$136,115	\$180,584
Plan members	13,181	12,813	25,994	14,375	14,055	28,430
Total Contributions	69,962	158,444	228,406	58,844	150,170	209,014
Investment income:						
Net appreciation in fair value of investments	93,630	255,426	349,056	53,344	146,114	199,458
Interest & dividends	4,620	12,599	17,219	3,666	9,798	13,464
Total gross investment income	98,250	268,025	366,275	57,010	155,912	212,922
Less:						
Investment expense	2,212	6,016	8,228	1,566	4,184	5,750
Net investment income	96,038	262,009	358,047	55,444	151,728	207,172
Securities lending income						
Less: securities lending expense						
Net securities lending income						
Total net investment income						
Other Income	416	1,132	1,548	552	1,476	2,028
Total additions	166,416	421,585	588,001	114,840	303,374	418,214
DEDUCTIONS						
Benefit payments	35,932	43,709	79,641	34,157	37,590	71,747
Refunds	3,456	898	4,354	3,854	1,007	4,861
Administrative expense	2,203	5,992	8,195	2,196	5,865	8,061
Total deductions	41,591	50,599	92,190	40,207	44,462	84,669
Changes in Net Position	124,825	370,986	495,811	74,633	258,912	333,545
NET POSITION RESTRICTED FOR PENSIONS						
BEGINNING OF YEAR	1,821,939	4,954,638	6,776,577	1,670,528	4,462,108	6,132,636
NET POSITION RESTRICTED FOR PENSIONS						
END OF YEAR	\$1,946,764	\$5,325,624	\$7,272,387	\$1,745,161	\$4,721,020	\$6,466,181



Teachers' and
Police Officers and Firefighters'
Retirement Fund



Interim Financial Statements and Schedules

Fiscal Year 2017



BOARD OF TRUSTEES MEETING DATES FOR CALENDAR YEAR 2017

	1:00 PM FULL BOARD (Approved 06/22/17)	Prior to the Board mtg. AUDIT (Approved 6/22/17)	BENEFITS (Approved 6/20/17)	10:00AM INVESTMENT (Approved 6/22/17)	OPERATIONS (Approved 6/20/17)
January	Thursday, January 26 ¹	Tuesday, January 24		January 26	
February					
March	Thursday, March 16 ²			March 16	Thursday, March 16
April	Thursday, April 20 ³				
May	Thursday, May 18 ⁴			Thursday, May 18	
June	Thursday, June 22	Thursday, June 22 ⁴	Tuesday, June 20	Thursday, June 22	Tuesday, June 20
July					
August					
September	Thursday, September 21 ⁵ **			Thursday, September 21	
October	Thursday, October 19				Thursday, October 12 ⁵
November	*Thursday, November 16			Thursday, November 16	
December	Thursday, December 21 ⁶	Thursday, December 21 ⁷	Thursday, December 14		Thursday, December 14 ⁸

*The March, May, June, September and November Board meetings will begin at approximately 1:00 p.m., due to the Investment Committee meeting.

**The Board of Trustees Annual Fiduciary & Ethics Education Sessions will be held prior to the April board meetings.

¹ Certified District Contribution; Approval of Audit & Financial Statements

² Board Officer Elections

³ Submit Financial Disclosure Forms; Appoint Committee Chairs

⁴ Annual Review of Insurance

⁵ Review Proposed Budget & Contracts Log

⁶ Certify Trustee Election Results and Approve Operating Budget

⁷ Annual Review with DCRB Auditors; CAFR/Financial Report; Update on Audit of Contracts; Review of Internal Controls (Annual Plan for Internal Auditor)

⁸ Actuarial Valuation; Actuarial Certification of District Contribution; Certify Trustee Election Results

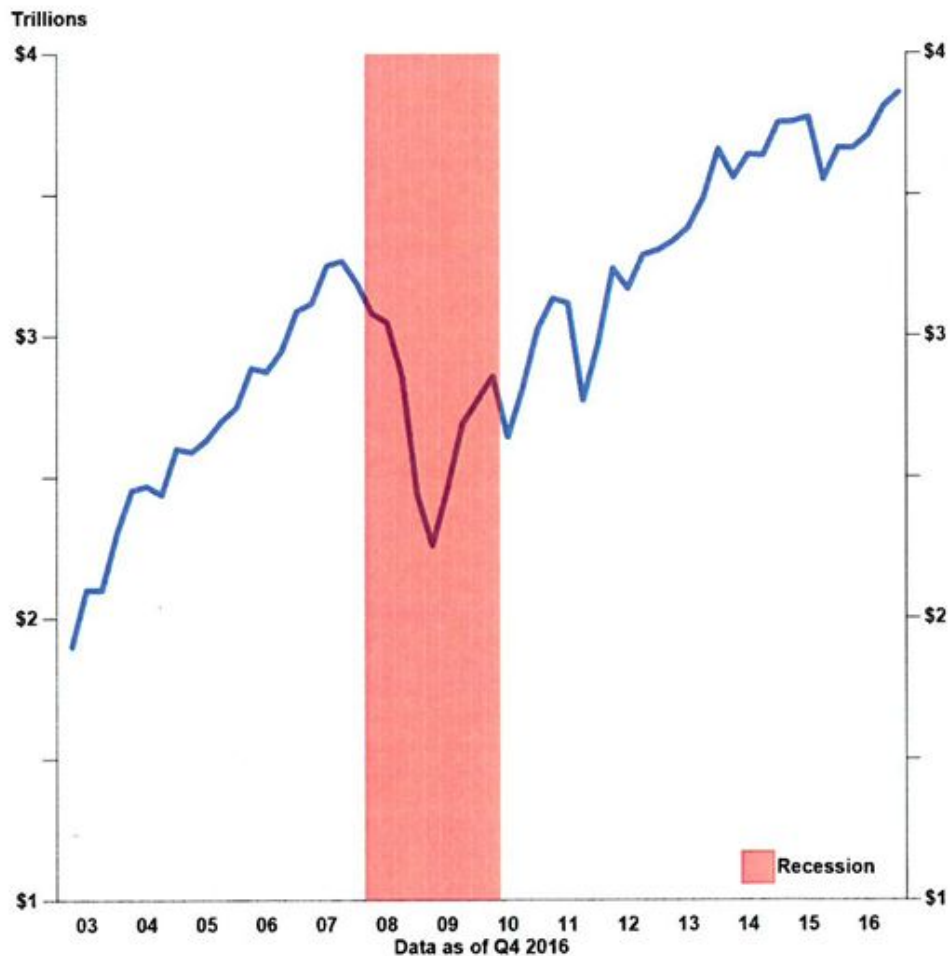


Public Pension Assets

QUARTERLY UPDATE (Q4 2016)

The Federal Reserve publishes data on state and local defined benefit assets on a quarterly basis. As of the fourth quarter of 2016 (December 31), public pension assets were a record \$3.86 trillion, up approximately 1.3 percent, from \$3.81 trillion as reported for Q3 2016. The next release is scheduled for June 2017.

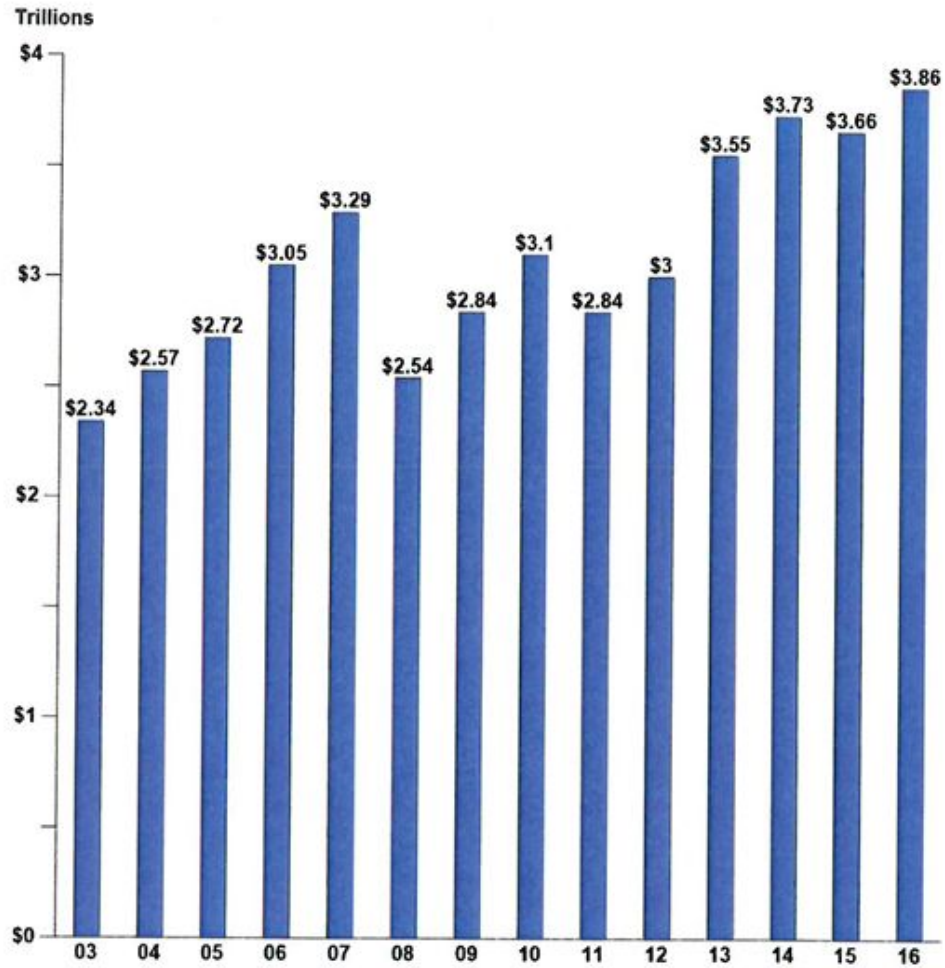
QUARTERLY CHANGE IN STATE & LOCAL DEFINED BENEFIT ASSETS, 2003-2016



ANNUAL UPDATE

The Federal Reserve reported in March that the combined value of defined benefit plan assets held by state and local governments as of Q4 2016 increased by 5.5 percent, to \$3.86 trillion, from \$3.66 trillion as of Q4 2015.

ANNUAL CHANGE IN STATE & LOCAL DEFINED BENEFIT ASSETS, 2003-2016



DISTRICT
OF COLUMBIANATIONAL INSTITUTE ON
Retirement Security
*For All, Today, in Sustainable Retirement***Pensionomics 2016:***Measuring the Economic Impact of DB Pension Expenditures***Key Findings**

Benefits paid by state and local pension plans support a significant amount of economic activity in DC.

Pension benefits received by retirees are spent in the local community. This spending ripples through the economy, as one person's spending becomes another person's income, creating a multiplier effect.

In 2014, expenditures stemming from state and local pensions supported...

- 1,876 jobs that paid \$122.5 million in wages and salaries
- \$322.2 million in total economic output
- \$81.5 million in federal, state, and local tax revenues

... in DC.

Each dollar paid out in pension benefits supported \$0.98 in total economic activity in DC.

Each dollar "invested" by DC taxpayers in these plans supported \$3.50 in total economic activity in DC.

Overview

Expenditures made by retirees of state and local government provide a steady economic stimulus to DC communities and the state economy. In 2014, 12,183 residents of DC received a total of \$341.3 million in pension benefits from state and local pension plans.



The average pension benefit received was \$2,368 per month or \$28,413 per year.

These modest benefits provide retired teachers, public safety personnel, and others who served the public during their working careers income to meet basic needs in retirement.

Between 1993 and 2014, 28.15% of DC's pension fund receipts came from employer contributions, 8.20% from employee contributions, and 63.65% from investment earnings.* Earnings on investments and employee contributions—not taxpayer based contributions—have historically made up the bulk of pension fund receipts.

Impact on Jobs and Incomes

Retiree expenditures stemming from state and local pension plan benefits supported 1,876 jobs in the state. The total income to state residents supported by pension expenditures was \$122.5 million.

To put these employment impacts in perspective, in 2014 DC's unemployment rate was 7.8%. The fact that DB pension expenditures supported 1,876 jobs is significant, as it represents 0.10 percentage points in DC's labor force.

Economic Impact

State and local pension funds in DC and other states paid a total of \$341.3 million in benefits to DC residents in 2014. Retirees' expenditures from these benefits supported a total of \$322.2 million in total economic output in the state, and \$205.7 million in value added in the state.

\$191.8 million in direct economic impacts were supported by retirees' initial expenditures. An additional \$93.4 million in indirect impact resulted when these businesses purchased additional goods and services. \$37.0 million in induced impacts occurred when workers employed by businesses as a result of the direct and indirect impacts made expenditures.

————— Total Economic Impact \$322.2 million —————

**DIRECT
IMPACT**
\$191.8 million

**INDIRECT
IMPACT**
\$93.4 million

**INDUCED
IMPACT**
\$37.0 million

Totals may not add up due to rounding. For data and methodology, see Brown, J., 2016, *Pensionomics 2016: Measuring the Economic Impact of DB Pension Expenditures*, National Institute on Retirement Security, Washington, DC, www.nirsonline.org. Results not directly comparable to previous *Pensionomics* due to methodological refinements.

Economic Multipliers

Taxpayer Contribution Factor*



\$1.00

contributed by taxpayers to
DC pensions over 30 years



\$3.50
total output

Each \$1 in taxpayer contributions to DC's pension plans supported \$3.50 in total output in the state. This reflects the fact that taxpayer contributions are a minor source of financing for retirement benefits—investment earnings and employee contributions finance the lion's share.

Pension Benefit Multiplier



\$1.00

pension benefits paid to
retirees in DC



\$0.98
total output

Each \$1 in state and local pension benefits paid to DC residents ultimately supported \$0.98 in total output in the state. This "multiplier" incorporates the direct, indirect, and induced impacts of retiree spending, as it ripples through the state economy.

*Caution should be used in interpreting these numbers. See the Technical Appendix of the full Pensionomics report for details.

Impact on Tax Revenues

State and local pension payments made to DC residents supported a total of \$81.5 million in revenue to federal, state, and local governments. Taxes paid by retirees and beneficiaries directly out of pension payments totaled \$39.4 million. Taxes attributable to direct, indirect and induced impacts accounted for \$42.1 million in tax revenue.

Federal Tax	\$37.5 million
State/Local Tax	\$44.0 million
Total	\$81.5 million

Economic Impacts by Industry Sector

The economic impact of state and local pension benefits was broadly felt across various industry sectors in DC. The ten industry sectors with the largest employment impacts are presented in the table below.

Industry	Employment Impact (# Jobs)	Labor Income Impact	Value Added Impact	Output Impact
Hospitals	164	\$15,624,727	\$16,850,747	\$27,059,868
Real Estate	91	\$4,720,764	\$23,701,666	\$28,416,611
Limited-Service Restaurants	80	\$2,506,661	\$6,015,945	\$8,813,939
Full-Service Restaurants	75	\$2,644,740	\$2,896,193	\$4,411,327
Home Health Care Services	68	\$2,370,689	\$1,815,097	\$2,528,916
Offices of Physicians	61	\$6,909,573	\$6,704,383	\$9,535,379
Retail - Food and Beverage Stores	57	\$1,963,179	\$2,793,992	\$4,026,495
Other Personal Services	50	\$1,604,311	-\$1,871,187	\$436,022
Personal Care Services	44	\$1,514,022	\$1,043,639	\$1,512,738
Other Financial Investment Activities	40	\$3,947,507	\$5,045,971	\$9,200,619

Industry totals include the first round of impacts from pension payments to state residents, and do not account for recaptured "leakage" to or from other states.

MARYLAND

**Pensionomics 2016:***Measuring the Economic Impact of DB Pension Expenditures***Key Findings**

Benefits paid by state and local pension plans support a significant amount of economic activity in the state of Maryland.

Pension benefits received by retirees are spent in the local community. This spending ripples through the economy, as one person's spending becomes another person's income, creating a multiplier effect.

In 2014, expenditures stemming from state and local pensions supported...

- 34,432 jobs that paid \$1.7 billion in wages and salaries
- \$5.3 billion in total economic output
- \$488.8 million in federal, state, and local tax revenues

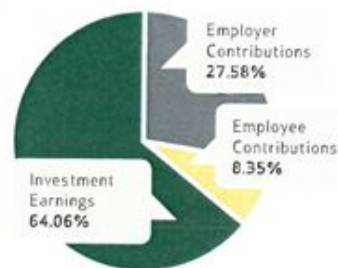
... in the state of Maryland.

Each dollar paid out in pension benefits supported \$1.25 in total economic activity in Maryland.

Each dollar "invested" by Maryland taxpayers in these plans supported \$4.55 in total economic activity in the state.

Overview

Expenditures made by retirees of state and local government provide a steady economic stimulus to Maryland communities and the state economy. In 2014, 181,677 residents of Maryland received a total of \$4.2 billion in pension benefits from state and local pension plans.



The average pension benefit received was \$1,901 per month or \$22,812 per year. These modest benefits provide retired teachers, public safety personnel, and others who served the public during their working careers income to meet basic needs in retirement.

Between 1993 and 2014, 27.58% of Maryland's pension fund receipts came from employer contributions, 8.35% from employee contributions, and 64.06% from investment earnings.* Earnings on investments and employee contributions—not taxpayer based contributions—have historically made up the bulk of pension fund receipts.

Impact on Jobs and Incomes

Retiree expenditures stemming from state and local pension plan benefits supported 34,432 jobs in the state. The total income to state residents supported by pension expenditures was \$1.7 billion.

To put these employment impacts in perspective, in 2014 Maryland's unemployment rate was 5.8%. The fact that DB pension expenditures supported 34,432 jobs is significant, as it represents 1.79 percentage points in Maryland's labor force.

Economic Impact

State and local pension funds in Maryland and other states paid a total of \$4.2 billion in benefits to Maryland residents in 2014. Retirees' expenditures from these benefits supported a total of \$5.3 billion in total economic output in the state, and \$3.1 billion in value added in the state.

\$2.6 billion in direct economic impacts were supported by retirees' initial expenditures. An additional \$1.5 billion in indirect impact resulted when these businesses purchased additional goods and services. \$1.2 billion in induced impacts occurred when workers employed by businesses as a result of the direct and indirect impacts made expenditures.



Totals may not add up due to rounding. For data and methodology, see Brown, J., 2016, *Pensionomics 2016: Measuring the Economic Impact of DB Pension Expenditures*, National Institute on Retirement Security, Washington, DC, www.nirsonline.org. Results not directly comparable to previous *Pensionomics* due to methodological refinements.

Economic Multipliers

Taxpayer Contribution Factor*



\$1.00

contributed by taxpayers to Maryland pensions over 30 years



\$4.55
total output

Each \$1 in taxpayer contributions to Maryland's state and local pension plans supported \$4.55 in total output in the state. This reflects the fact that taxpayer contributions are a minor source of financing for retirement benefits—investment earnings and employee contributions finance the lion's share.

Pension Benefit Multiplier



\$1.00

pension benefits paid to retirees in Maryland



\$1.25
total output

Each \$1 in state and local pension benefits paid to Maryland residents ultimately supported \$1.25 in total output in the state. This "multiplier" incorporates the direct, indirect, and induced impacts of retiree spending, as it ripples through the state economy.

*Caution should be used in interpreting these numbers. See the Technical Appendix of the full Pensionomics report for details.

Impact on Tax Revenues

State and local pension payments made to Maryland residents supported a total of \$488.8 million in revenue to federal, state, and local governments. Taxes paid by retirees and beneficiaries directly out of pension payments totaled \$384.6 million. Taxes attributable to direct, indirect and induced impacts accounted for \$104.2 million in tax revenue.

Federal Tax	\$214.5 million
State/Local Tax	\$274.3 million
Total	\$488.8 million

Economic Impacts by Industry Sector

The economic impact of state and local pension benefits was broadly felt across various industry sectors in Maryland. The ten industry sectors with the largest employment impacts are presented in the table below.

Industry	Employment Impact (# Jobs)	Labor Income Impact	Value Added Impact	Output Impact
Hospitals	2,015	\$143,528,195	\$171,527,589	\$296,806,247
Real Estate	1,801	\$42,554,536	\$321,296,936	\$414,289,024
Limited-Service Restaurants	1,397	\$28,204,641	\$67,573,339	\$116,393,896
Full-Service Restaurants	1,383	\$32,470,476	\$36,707,654	\$64,627,549
Offices of Physicians	1,136	\$104,094,287	\$100,832,326	\$153,722,303
Retail - Food and Beverage Stores	981	\$33,574,312	\$48,544,892	\$69,607,019
Nursing and Community Care Facilities	957	\$37,946,662	\$40,414,150	\$63,626,519
Retail - General Merchandise Stores	774	\$20,286,602	\$34,025,205	\$53,338,782
Wholesale Trade	774	\$66,188,555	\$121,345,529	\$187,828,505
All Other Food and Drinking Places	699	\$22,379,254	\$18,293,676	\$29,400,346

Industry totals include the first round of impacts from pension payments to state residents, and do not account for recaptured "leakage" to or from other states.

VIRGINIA

**Pensionomics 2016:***Measuring the Economic Impact of DB Pension Expenditures***Key Findings**

Benefits paid by state and local pension plans support a significant amount of economic activity in the state of Virginia.

Pension benefits received by retirees are spent in the local community. This spending ripples through the economy, as one person's spending becomes another person's income, creating a multiplier effect.

In 2014, expenditures stemming from state and local pensions supported...

- 37,768 jobs that paid \$1.8 billion in wages and salaries
- \$5.7 billion in total economic output
- \$1.2 billion in federal, state, and local tax revenues

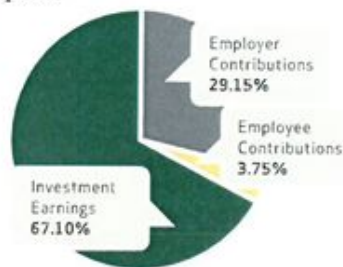
... in the state of Virginia.

Each dollar paid out in pension benefits supported \$1.23 in total economic activity in Virginia.

Each dollar "invested" by Virginia taxpayers in these plans supported \$4.22 in total economic activity in the state.

Overview

Expenditures made by retirees of state and local government provide a steady economic stimulus to Virginia communities and the state economy. In 2014, 218,443 residents of Virginia received a total of \$4.7 billion in pension benefits from state and local pension plans.



The average pension benefit received was \$1,778 per month or \$21,337 per year. These modest benefits provide retired teachers, public safety personnel, and others who served the public during their working careers income to meet basic needs in retirement.

Between 1993 and 2014, 29.15% of Virginia's pension fund receipts came from employer contributions, 3.75% from employee contributions, and 67.10% from investment earnings.* Earnings on investments and employee contributions—not taxpayer based contributions—have historically made up the bulk of pension fund receipts.

Impact on Jobs and Incomes

Retiree expenditures stemming from state and local pension plan benefits supported 37,768 jobs in the state. The total income to state residents supported by pension expenditures was \$1.8 billion.

To put these employment impacts in perspective, in 2014 Virginia's unemployment rate was 5.2%. The fact that DB pension expenditures supported 37,768 jobs is significant, as it represents 1.96 percentage points in Virginia's labor force.

Economic Impact

State and local pension funds in Virginia and other states paid a total of \$4.7 billion in benefits to Virginia residents in 2014. Retirees' expenditures from these benefits supported a total of \$5.7 billion in total economic output in the state, and \$3.3 billion in value added in the state.

\$2.7 billion in direct economic impacts were supported by retirees' initial expenditures. An additional \$1.7 billion in indirect impact resulted when these businesses purchased additional goods and services. \$1.2 billion in induced impacts occurred when workers employed by businesses as a result of the direct and indirect impacts made expenditures.



Totals may not add up due to rounding. For data and methodology, see Brown, J., 2016, *Pensionomics 2016: Measuring the Economic Impact of DB Pension Expenditures*, National Institute on Retirement Security, Washington, DC, www.nirsonline.org. Results not directly comparable to previous *Pensionomics* due to methodological refinements.

Economic Multipliers

Taxpayer Contribution Factor*



\$1.00

contributed by taxpayers to
Virginia pensions over 30 years



\$4.22
total output

Each \$1 in taxpayer contributions to Virginia's state and local pension plans supported \$4.22 in total output in the state. This reflects the fact that taxpayer contributions are a minor source of financing for retirement benefits—investment earnings and employee contributions finance the lion's share.

Pension Benefit Multiplier



\$1.00

pension benefits paid to
retirees in Virginia



\$1.23
total output

Each \$1 in state and local pension benefits paid to Virginia residents ultimately supported \$1.23 in total output in the state. This "multiplier" incorporates the direct, indirect, and induced impacts of retiree spending, as it ripples through the state economy.

*Caution should be used in interpreting these numbers. See the Technical Appendix of the full Pensionomics report for details.

Impact on Tax Revenues

State and local pension payments made to Virginia residents supported a total of \$1.2 billion in revenue to federal, state, and local governments. Taxes paid by retirees and beneficiaries directly out of pension payments totaled \$449.8 million. Taxes attributable to direct, indirect and induced impacts accounted for \$760.4 million in tax revenue.

Federal Tax	\$626.8 million
State/Local Tax	\$583.4 million
Total	\$1.2 billion

Economic Impacts by Industry Sector

The economic impact of state and local pension benefits was broadly felt across various industry sectors in Virginia. The ten industry sectors with the largest employment impacts are presented in the table below.

Industry	Employment Impact (# Jobs)	Labor Income Impact	Value Added Impact	Output Impact
Real Estate	2,055	\$41,228,280	\$331,443,980	\$437,527,421
Full-Service Restaurants	1,687	\$36,419,846	\$38,962,824	\$73,006,222
Hospitals	1,662	\$113,425,146	\$135,275,037	\$238,583,822
Limited-Service Restaurants	1,660	\$29,680,789	\$68,615,776	\$126,658,406
Offices of Physicians	1,194	\$118,023,047	\$116,083,500	\$171,666,605
Retail - General Merchandise Stores	1,039	\$27,773,137	\$45,218,908	\$71,141,415
Retail - Food and Beverage Stores	967	\$27,202,475	\$40,058,186	\$60,820,116
Nursing and Community Care Facilities	951	\$33,460,967	\$35,960,269	\$59,036,936
Wholesale Trade	836	\$70,682,439	\$125,323,348	\$197,141,268
Individual and Family Services	755	\$17,488,662	\$16,541,766	\$24,882,869

Industry totals include the first round of impacts from pension payments to state residents, and do not account for recaptured "leakage" to or from other states.



PIMS Program Updates

June 22, 2017



Presenters.

- Wayne Ellis, Senior Project Manager
- Akio Tagawa, Principal

Linea Solutions is an I.T. and management consulting firm providing services to public sector defined benefit plans. Linea primarily performs services related to:

- Procurement of PIMS and related software,
- Project management and implementation oversight and
- Business process consulting (process improvement, change management).

Linea is independent, does not develop software, and does not have any financial relationship with any of the software vendors in this industry.

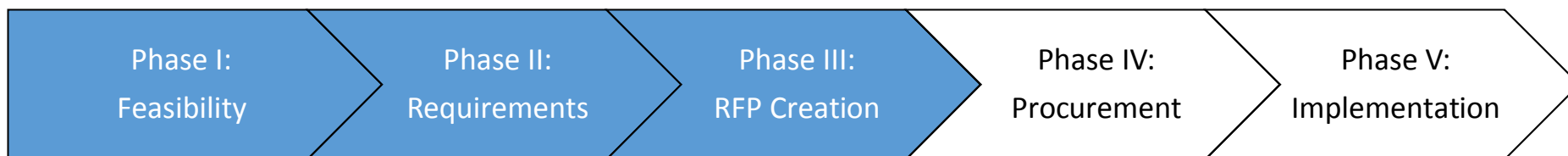


Linea Solutions' Role with PIMS.

Timeframe	Description of Linea's role	Details
Mid-2012	First hired to assist Benefits Department with a benefits business process re-engineering project	<ul style="list-style-type: none"> • Process review and short-term, medium-term and PIMS-based long-term improvement recommendations • Assist on Benefits re-organization
Mid-2014	PIMS feasibility study and system/business requirements	<ul style="list-style-type: none"> • Conduct feasibility study • Gather/document PIMS requirements • Develop first draft of PIMS RFP
Fall 2016	PIMS procurement and oversight project management	<ul style="list-style-type: none"> • Finalize PIMS RFP • Lead DCRB in procurement process • Provide project management for PIMS implementation

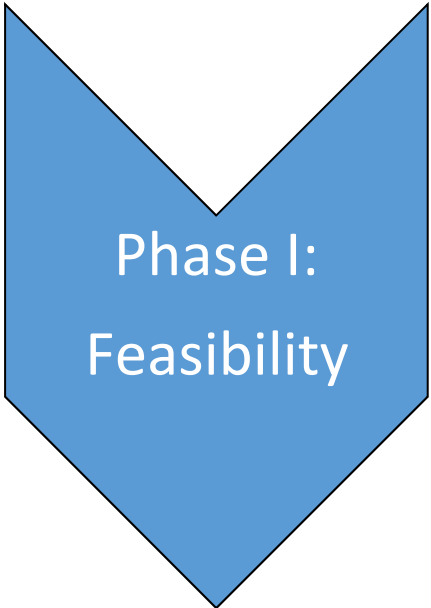


PIMS Program Phases.





PIMS Feasibility Study.

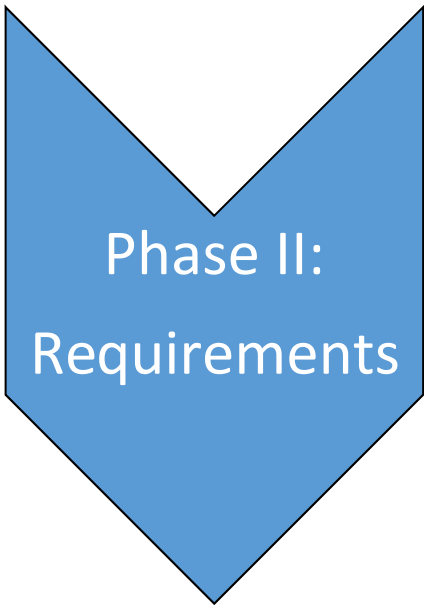


Phase I: Feasibility

- **August – December 2014**
- **Feasibility Study and Presentation:** over 20 interviews conducted and 23 vendors reviewed.
- **Roadmap and Organization Chart:** 65 events/actions identified and 11 staffing descriptions provided.
- **Vendor PIMS Demonstrations:** 8 vendor demos, over 30 presentation hours, and 22 system documents.



PIMS Requirements Gathering.



Phase II: Requirements

- **August 2014 – February 2015**
- **Requirements Gathering and Documentation:** 20 process documents, close to 500 pages, 30 workflows with over 235 total steps, 16 process recommendations, and 1276 system requirements.
- **Request For Information:** 6 vendor responses, best practices, estimated costs, timelines, and staffing.
- **Additional Project Work:** Requirements Traceability Matrix, Online Guide Discussion, and Legal Case Management and Workflow Requirements.



Request For Information.

March – April 2015

- Based on initial sets of technical requirements an RFI was produced to:
 - test the market
 - understand feasibility, identify which vendors were capable
 - gather insight into implementation strategy, timing, duration and
 - obtain order of magnitude vendor pricing
- Six (6) Vendor Responses:** Accenture, Deloitte, Hewlett Packard, iBridge Group, Morneau Shepell, and Sagitec.
- Thirteen (13) RFI Questions:** from cost to timelines and processes to staffing and project success factors.
- 25 Page Response Summaries Document:** action items and decisions from ongoing vendor discussions to providing vendor feedback. Provided next steps from financing to implementation sequence.



RFI Notable Highlights.

- Average vendor duration estimate was approximately 4 years, with a low of 2 ½ years, and high of six years
- Average vendor estimate was around \$26 million
 - Low estimate of \$5 million
 - High estimate of \$45 million
 - Cost estimates were for vendor only, not for entire program
- Implementation costs would be higher if DCRB chose to break up implementation into multiple, distinct projects
- Based on the RFIs, overall PIMS cost is estimated to be approximately \$35 million
 - Projected annual cost is expected to be approximately \$5 million over 7 years



PIMS High Level Functions & Requirements.

- When completed, PIMS will automate:
 - Member enrollment
 - Employer reporting (importing of member contributions, salary, service, demographic updates)
 - Service credit purchases, deaths, disabilities, QDROs
 - Calculation of retirement benefits
 - Calculation and processing of refunds
 - Retiree payroll
 - Annual member statements
 - Actuarial valuation and experience extracts
 - COLA granting
 - Tax reporting
 - Tracking inactives (term vested)

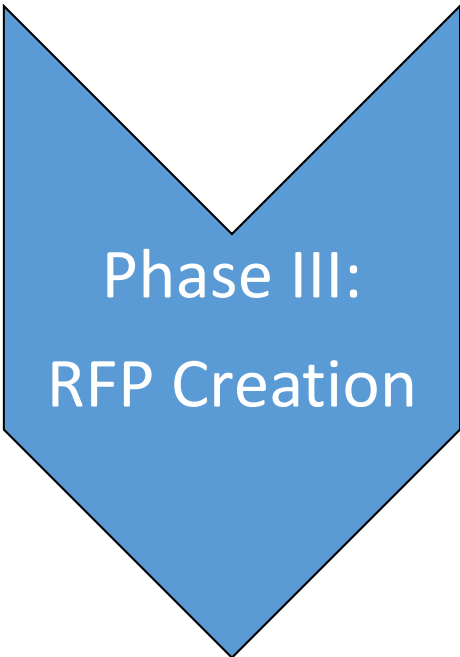


PIMS High Level Functions & Requirements, con't.

- PIMS will also integrate with other cross-functional components, such as:
 - Imaging / document management
 - Customer Relationship Management – case management
 - Business Process Management – automated workflow processing
 - Correspondence/document management
 - Reporting
 - Self-service portals
- PIMS data will be integrated with the Master Data Management database
- PIMS can be hosted in a dedicated, cloud-based environment



PIMS RFP Creation.



Phase III: RFP Creation

- **July 2015 – April 2017**
- PIMS RFP document first draft completed
 - Initial draft left many key decisions unanswered
- **PIMS RFP Document:** over 375 pages, ~1300 requirements, and over 35 hours of DCRB Staff Review
- **PIMS Procurement Project Schedule and Evaluation Criteria Templates:** 20 step procurement process and 53 weighted qualitative evaluation criteria



Content of PIMS RFP.

- Based on our knowledge and experience elsewhere, there are multiple PIMS vendors that are capable of providing the needed services.
- The key to the RFP is to help select the best “fit” vendor
- The goal of the PIMS RFP is to be comprehensive, not just in requirements, but also to highlight differentiators from one industry vendor from another, such as asking about corporate strategies and long-term vision, implementation plans, project team information, etc.
- RFP consists of:
 - **Three (3) Main Sections:** objectives and requirements, general terms and conditions, and special terms and conditions.
 - **Ten (10) Appendices:** from minimum qualifications, functional overviews, and implementation plans to requirements, warranties, confidentiality agreements, and cost proposals.



Potential Sequence of PIMS Functions to go Online.

- Customer Relationship Management
- Annual benefits statements
- Core pension administration functionality
- Automated workflow (if not part of earlier functionality to go online)
- Finance and accounting automation
- Payroll
- Actuarial services and reporting
- Member self-service
- Retiree self-service
- Employer self-service
- Business intelligence / analytics
- Mobile applications
- Member services – chat functionality



Current State of RFP.

- DCRB staff presented highlights and proposed budget to Board in Sept 2015
- Staff was directed to proceed to next phases, procurement and implementation
- DCRB released RFP to procure consultant to assist with next phases, and selected Linea Solutions to continue assisting
- Linea Solutions was re-engaged in Oct 2016
- First steps were to update RFP, validate requirements, and strive to drive out key decisions that were originally left unanswered



Overall Program Cost Estimates.

Overall program costs at this stage are preliminary and require vendor RFP responses to solidify such key factors as vendor implementation costs, timing and duration, implementation sequence. These factors will have a material impact on other aspects of the program.

Component	Potential Cost
PIMS Vendor (one-time implementation cost)	\$26 million
Project management and client services assistance from outside resources (during requirements, design, testing, organizational change management, etc.)	\$7 million
Data integration assistance	\$2 million
TOTAL ESTIMATE	\$35 million



Overall Program Cost Estimates – Ongoing Costs.

Ongoing costs have not yet been tested in the market, but are based on estimates from other vendor agreements.

Component	Potential Cost
Annual hosting fees (for infrastructure and platform support)	TBD
Annual maintenance and support	TBD
TOTAL ESTIMATE	Approx 20-25% of annual costs



Cost Control Measures.

- ✓ Substantial, detailed system and business requirements
- ✓ Substantial pre-work in areas of MDM design, data governance
- ✓ Assigning experienced, industry project management resources
- ☐ Assigning adequate resources on DCRB side to keep up with selected vendor
- ☐ Assigning experienced data integration resources
- ☐ Breaking program down into smaller, manageable components/modules where some results are seen sooner
- ☐ Mandating an “agile” implementation approach/framework (so that risks/issues are addressed earlier)
- ☐ Performing Proofs of Concept (prototyping) with finalist vendors



Outstanding Questions.

- Treasury Department involvement and commitment
- One or two checks? Ability to separate or combine payments from different plans
- Other?

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DISTRICT OF COLUMBIA RETIREMENT BOARD

MOTION:

**TO APPROVE CERTAIN SUBSTANTIVE AND TECHNICAL AMENDMENTS TO
THE DCRB INVESTMENTS COMMITTEE CHARTER.**

PRESENTED TO THE BOARD ON JUNE 22, 2017

900 7th Street, NW, 2nd Floor
Washington, DC 20001
www.dcrb.dc.gov



Telephone (202) 343-3200
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TO: BOARD OF TRUSTEES
FROM: MARY COLLINS, CHAIR
DATE: JUNE 22, 2017
SUBJECT: OPERATIONS COMMITTEE REPORT

The Operations Committee met on June 20, 2017 and approved the following action items:

1. To maintain the economic assumptions as noted in the Actuarial Experience Study for the period of October 1, 2010 – September 30, 2015 as recommended by the Board's actuary, Cavanaugh Macdonald Consulting, LLC.

Price Inflation:	3.50%
Real Rate of Return:	3.00%
Investment Return:	6.50%
Wage Inflation:	4.25%

2. To approve the demographic as noted in the Actuarial Experience Study for the period of October 1, 2010 – September 30, 2015 as recommended by the Board's actuary, Cavanaugh Macdonald Consulting, LLC.
3. To approve the new recommended amortization method of a layered approach based on 15-year periods starting with the 2017 valuation to avoid the potential volatility of shorter amortization periods.
4. To accept the recommendation for the administrative expenses increasing from 1.2% of payroll to 1.6% of payroll.

AMENDMENT

To offer an amendment to the motion that was approved in the Operations Committee and approve the recommendation for administrative expenses to remain 1.2% of payroll for Teachers and increasing from 1.2% to 2.1% of payroll for Police and Fire, as recommended by the Board's actuary, Cavanaugh Macdonald Consulting, LLC.

5. To maintain the current actuarial cost method.
6. To approve changing the asset smoothing to a 5-year smoothing method with a 20% corridor around the market value of assets.

7. To authorize the Interim Executive Director to issue a Request for Proposal to acquire an e-Procurement System that meets DCRB's needs and is compatible with DCRB's Financial Management System.
8. To approve certain substantive and technical amendments to the DCRB Operations Committee Charter.



Cavanaugh Macdonald
CONSULTING, LLC

The experience and dedication you deserve



District of Columbia Retirement Board

Experience Study for the Period
October 1, 2010 – September 30, 2015

Ed Koebel EA, FCA, MAAA
Jonathan Craven ASA, EA, FCA, MAAA
June 22, 2017





Agenda



- Economic Experience
 - Price Inflation
 - Investment Return
 - Wage Inflation
- Demographic Experience
 - Withdrawal
 - Disability
 - Retirement
 - Mortality
 - Salary Scale
- Other Assumptions
- Financial Impact on 2016 Valuation



Economic Assumptions

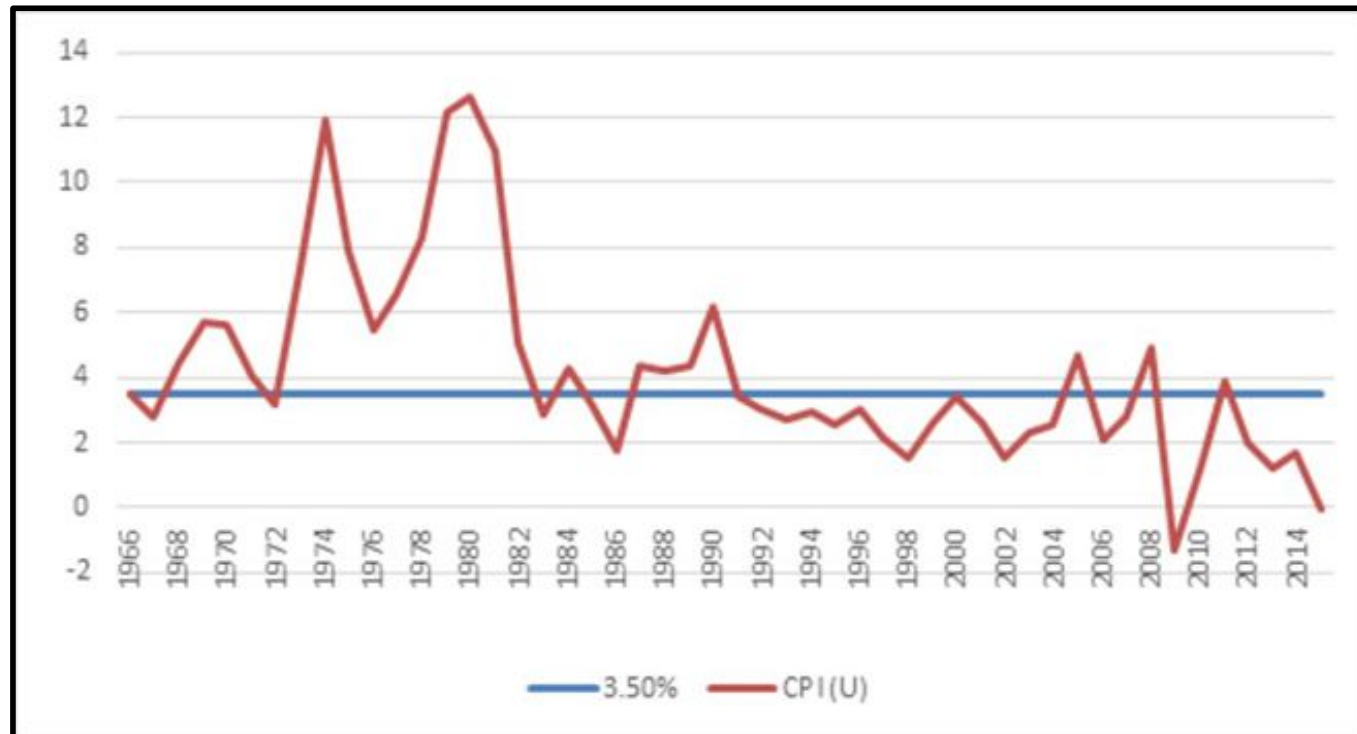
- Assumptions reviewed
 - Price inflation
 - Investment return
 - Wage inflation

- Actuarial Standard of Practice (ASOP) No. 27, "Selection of Economic Assumptions for Measuring Pension Obligations" provides guidance to actuaries in selecting economic assumptions for measuring obligations under defined benefit plans.



Price Inflation

- Current assumption: 3.50%
- Historical data: Annual CPI (U) Increases

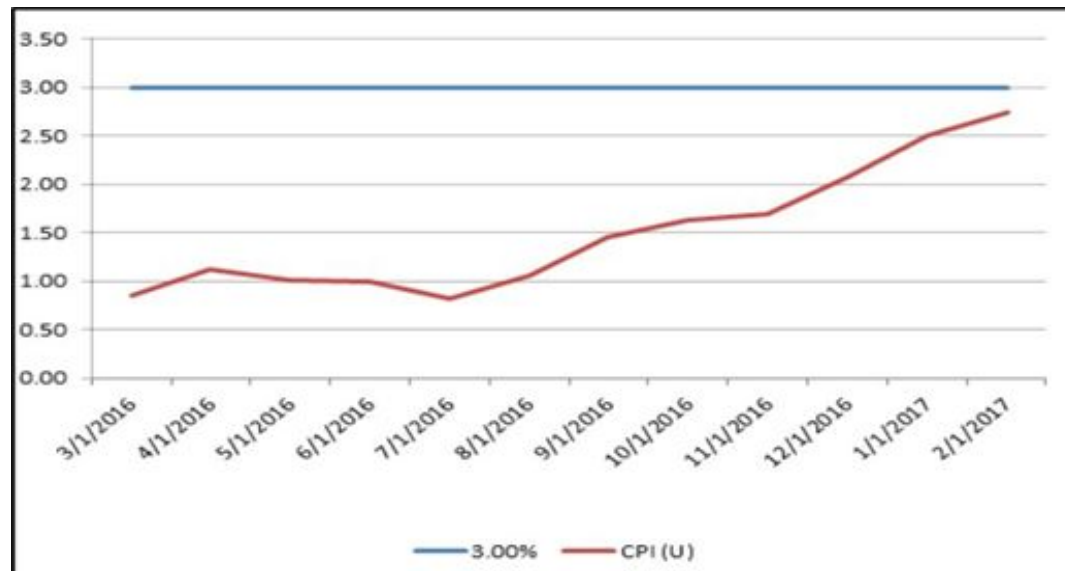




Price Inflation

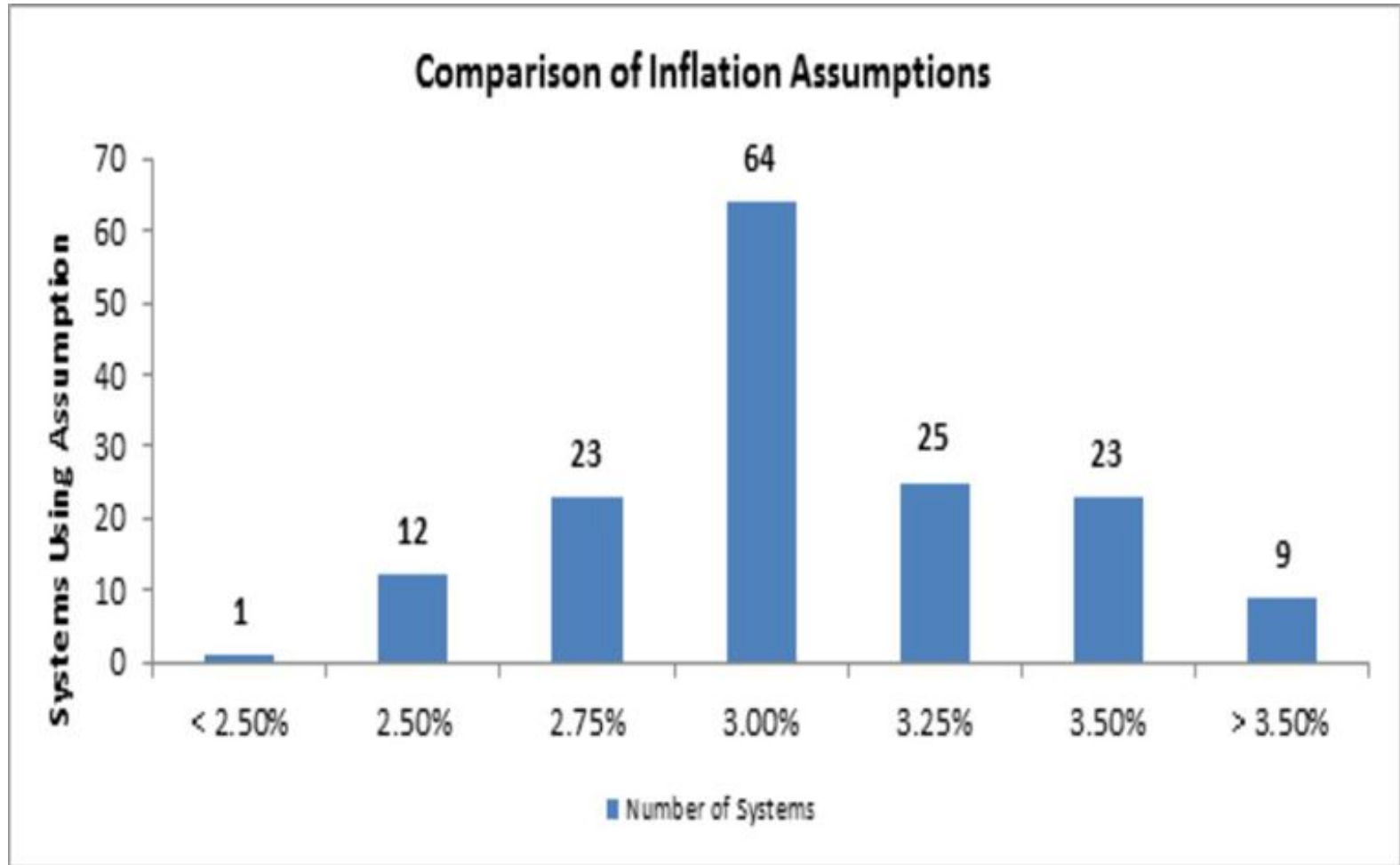
➤ Forecasts

- Survey of Professional Forecasters as published by the Philadelphia Federal Reserve Bank
 - Median rate over the next ten years is 2.3%
- Month over month annual inflation rate for March 2016 through February 2017





Public Plan Database – Center for Retirement Research





Investment Return



➤ Current Assumption

Price inflation	3.50%
Real rate of return	<u>3.00%</u>
Total return (net of investment expenses)	6.50%

Nominal Total Rate of Return		
Year Ending 9/30	Actuarial Value	Market Value
2011	1.42%	2.96%
2012	2.72%	14.08%
2013	3.87%	11.41%
2014	4.72%	8.10%
2015	6.14%	(4.05%)
Average	3.76%	6.30%



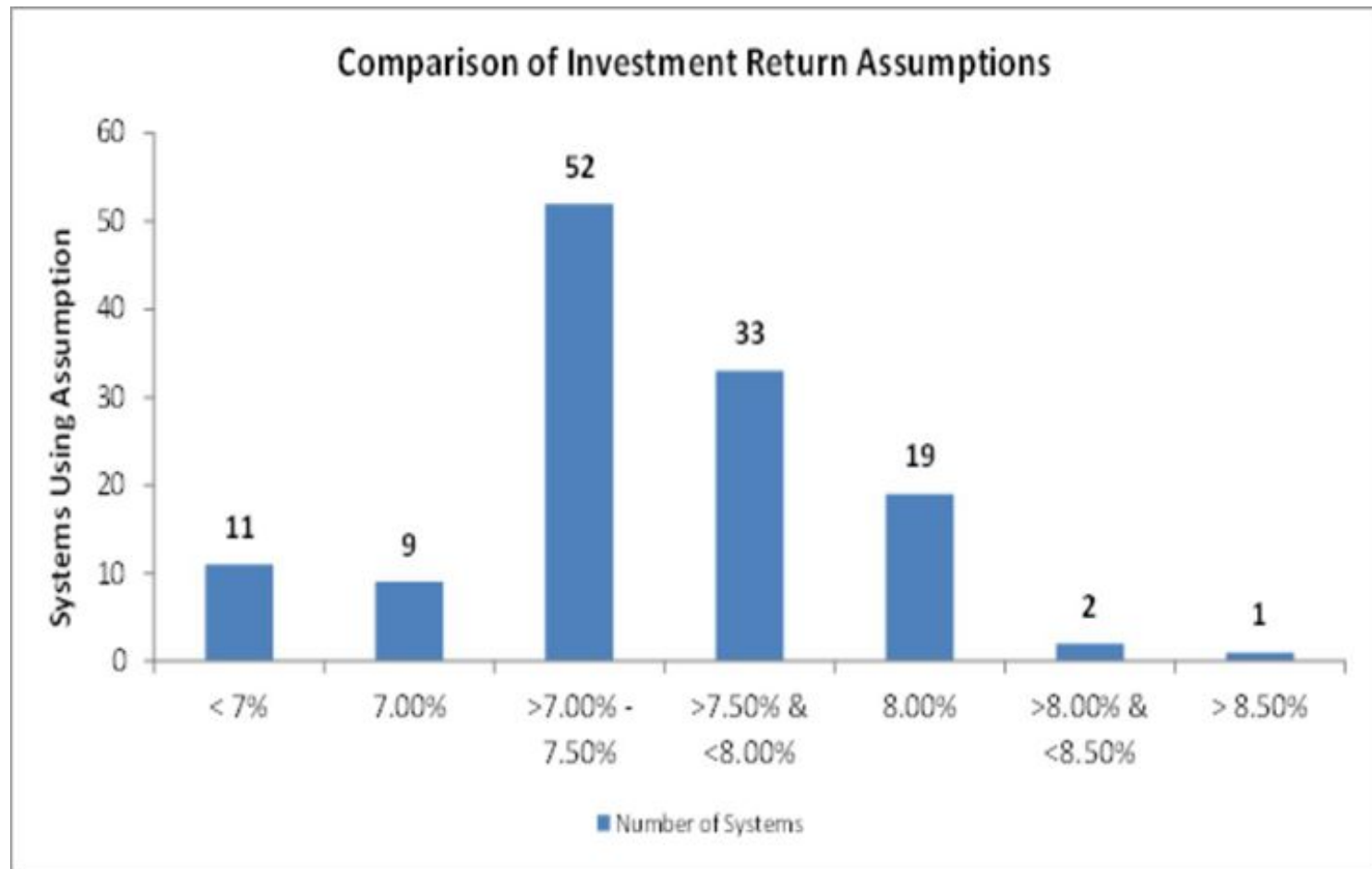
Investment Return

- Stochastic projection expected range of real rates of return
- Based on DCRB's current capital market assumptions and policy target asset allocation but with a much longer time horizon

Time Span in Years	Mean Real Return	Standard Deviation	Real Returns by Percentile				
			5th	25th	50th	75th	95th
1	6.11%	13.70%	-14.77%	-3.44%	5.31%	14.85%	30.12%
5	5.41%	6.07%	-4.20%	1.30%	5.31%	9.47%	15.76%
10	5.33%	4.28%	-1.50%	2.46%	5.31%	8.24%	12.59%
20	5.28%	3.03%	0.44%	3.29%	5.31%	7.37%	10.41%
30	5.27%	2.47%	1.32%	3.65%	5.31%	6.99%	9.46%
40	5.26%	2.14%	1.85%	3.87%	5.31%	6.76%	8.89%
50	5.26%	1.91%	2.21%	4.03%	5.31%	6.61%	8.51%



NASRA Public Fund Survey (As of FYE 2015)





Well Funded Plan Comparison

- 20 Plans from Public Plan Databases with funded ratios or 90% +.
- Average inflation assumption: 2.90%
- Highest inflation assumption: 3.25%
- Lowest inflation assumption: 2.60%
- Average investment return assumption: 7.47%.
- Highest investment return assumption: 8.25%
- Lowest investment return assumption: 7.00%



Wage Inflation

- Wage inflation is the inflation above the price inflation as a reflection of the overall return on the labor in the economy.
- Current assumption is 0.75% above price inflation.
- Social Security 75 year projection of national wage growth assumption is 1.20% greater than price inflation.



Economic Assumptions



➤ Recommendations:

Item	Current	Alternative A
Price Inflation	3.50%	2.75%
Real Rate of Return	<u>3.00%</u>	<u>3.50%</u>
Investment Return	6.50%	6.25%
Price Inflation	3.50%	2.75%
Real Wage Growth	<u>0.75%</u>	<u>1.25%</u>
Wage Inflation	4.25%	4.00%



Economic Assumptions

➤ Recommendations (Select & Ultimate):

Item	Current	Alternative B First 10 Years	Alternative B Other Years
Price Inflation	3.50%	2.50%	3.00%
Real Rate of Return	<u>3.00%</u>	<u>3.50%</u>	<u>3.50%</u>
Investment Return	6.50%	6.00%	6.50%
Price Inflation	3.50%	2.50%	3.00%
Real Wage Growth	<u>0.75%</u>	<u>1.25%</u>	<u>1.25%</u>
Wage Inflation	4.25%	3.75%	4.25%



Demographic Assumptions

- Assumptions Reviewed
 - Rates of Withdrawal
 - Rates of Disability Retirement
 - Rates of Retirement
 - Rates of Mortality
 - Rates of Salary Increase

- Actuarial Standard of Practice (ASOP) No. 35, *“Selection of Demographic and Other Noneconomic Assumptions for Measuring Pension Obligations”*, which provides guidance to actuaries in selecting demographic assumptions for measuring obligations under defined benefit plans.



Demographic Assumptions

Assumption	Recommendations
Withdrawal	Teachers – Split for males and females and increase rates Police Officers & Firefighters – Increase rates
Disability Retirement	Teachers & Firefighters – Lower rates Police Officers – No Change
Service Retirement	Teachers, Police Officers and Firefighters – Change rates at all ages and/or service levels to match experience
Mortality	Change to RPH 2014 Blue Collar Mortality Table projected with generational mortality for all Plans
Salary Scale	Teachers – No Change Police Officers and Firefighters – Refined merit scale to better match step, retention and longevity increases



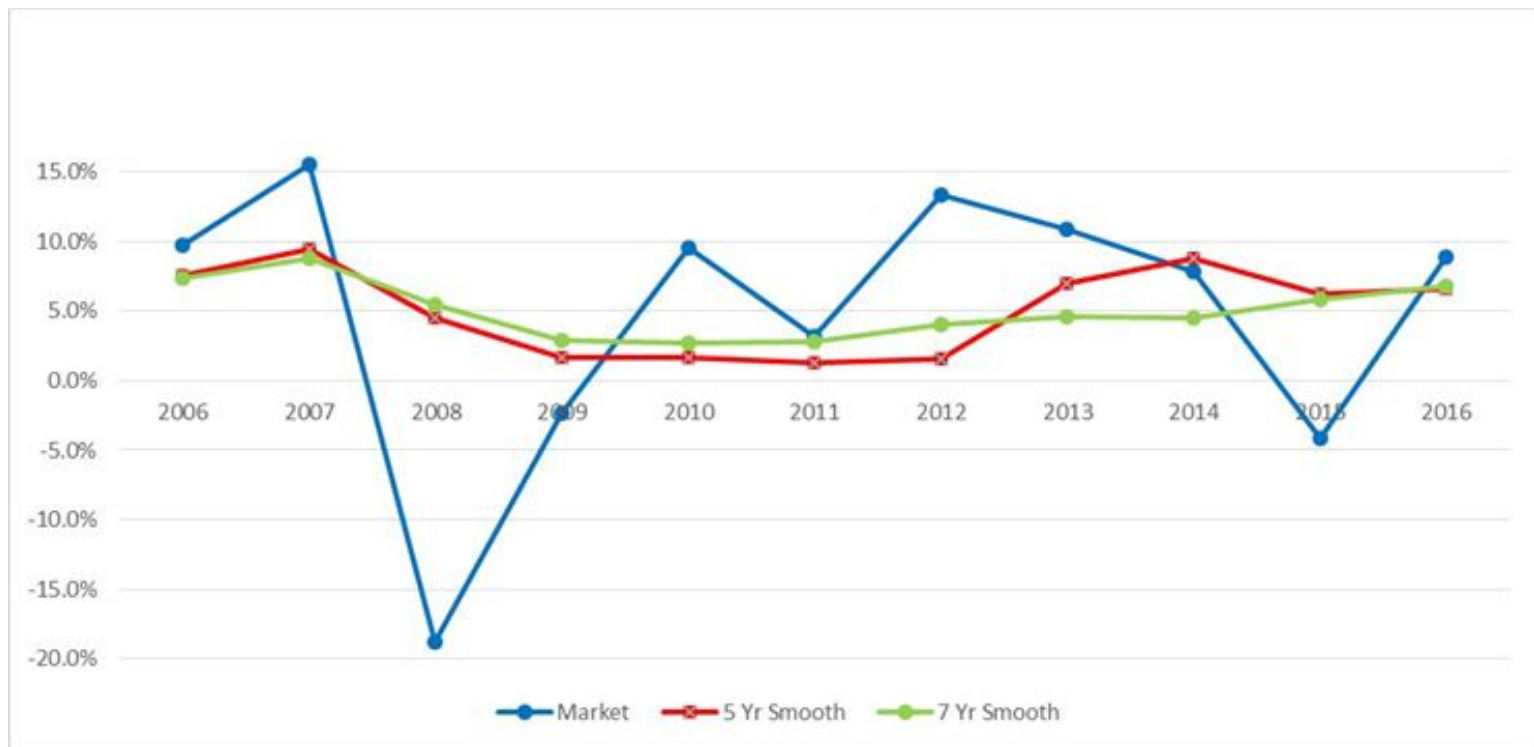
Other Assumptions

- **Asset Methodology** – Currently using 7 year smoothing of market gains and losses with a 20% corridor around the market value of assets. We recommend changing to a five years smoothing period with and maintaining the 20% corridor around market value of assets.

Smoothing of Asset Gains/Losses	7-year Smoothing	5-year Smoothing
\$70 Million Loss	Recognize \$10 Million Each Year for 7 Years	Recognize \$14 Million Each Year for 5 years



Asset Smoothing Comparison





Other Assumptions

- Amortization Method – 16 years remaining on closed 20 year amortization period set up with funding policy in 2012. We recommend a layered approach based on 15 year periods starting with the 2017 valuation to avoid the potential volatility of shorter amortization periods.

Valuation 2018 – Recommendation	Remaining UAAL (\$ in Thousands)	Remaining Period	Amortization Payment
Initial UAAL (2017)	\$200,000	14 years	\$22,188
2018 (Gain)/Loss	\$40,000	15 years	\$4,254
Total UAAL	\$240,000	14.2 years	\$26,442
UAAL Contribution Rate			5.16%

Valuation 2018 – Current Method	Remaining UAAL (\$ in Thousands)	Remaining Period	Amortization Payment
UAAL (2018)	\$240,000	14 years	\$26,626
UAAL Contribution Rate			5.20%



Other Assumptions

- Administrative Expenses – We allocate administrative expenses based on payroll. DCRB currently allocates administrative expenses based on assets. If DCRB changes their administrative expense allocation to payroll allocation, we recommend increasing our assumption from 1.20% of payroll to 1.60%. If DCRB continues to allocate based on assets, we recommend 1.20% for Teachers and 2.10% for Police and Fire.
- Valuation Cost Method – Entry Age Normal Cost Method (EAN). We recommend no change.



2016 Financial Impact



➤ Teachers' Retirement Plan (\$ in thousands)

	Valuation Results 2016	Demographic Changes Only	Demographic and Economic Changes "A"	Demographic and Economic Changes "B"
Unfunded Actuarial Accrued Liability	\$184,164	\$221,034	\$237,508	\$247,034
ADEC Rate	11.51%	12.28%	12.85%	12.80%
ADEC Amount	\$59,046	\$62,562	\$64,884	\$64,378
Funded Ratio	90.9%	89.3%	88.6%	88.2%



2016 Financial Impact



➤ Police Officers' Retirement Plan (\$ in thousands)

	Valuation Results 2016	Demographic Changes Only	Demographic and Economic Changes "A"	Demographic and Economic Changes "B"
Unfunded Actuarial Accrued Liability	\$(419,961)	\$(321,015)	\$(301,051)	\$(295,577)
ADEC Rate	20.69%	21.33%	22.62%	22.55%
ADEC Amount	\$59,952	\$61,943	\$65,620	\$65,068
Funded Ratio	113.5%	110.0%	109.3%	109.1%



2016 Financial Impact



➤ Fire Fighters' Retirement Plan (\$ in thousands)

	Valuation Results 2016	Demographic Changes Only	Demographic and Economic Changes "A"	Demographic and Economic Changes "B"
Unfunded Actuarial Accrued Liability	\$(66,577)	\$(85,486)	\$(75,774)	\$(77,844)
ADEC Rate	34.26%	29.30%	30.59%	30.08%
ADEC Amount	\$45,644	\$38,422	\$40,087	\$39,139
Funded Ratio	104.8%	105.8%	105.5%	105.7%



2016 Financial Impact



➤ Total - All Plans (\$ in thousands)

	Valuation Results 2016	Demographic Changes Only	Demographic and Economic Changes "A"	Demographic and Economic Changes "B"
Unfunded Actuarial Accrued Liability	\$(302,374)	\$(185,467)	\$(139,317)	\$(126,387)
ADEC Rate	18.26%	18.08%	19.01%	18.88%
ADEC Amount	\$164,642	\$162,927	\$170,591	\$168,585
Funded Ratio	104.6%	102.8%	102.1%	101.9%



Contribution Projection



➤ Total - All Plans (\$ in thousands)

FYE	Current Assumptions	Demographic Changes Only	Demographic and Economic Changes "A"	Demographic and Economic Changes "B"
2018	\$164,642	\$164,642	\$164,642	\$164,642
2019	172,675	169,719	178,677	176,839
2020	179,430	175,614	185,250	182,650
2021	191,282	186,804	196,154	192,810



Summary of Recommendations

Item	Current	Alternative A
Price Inflation	3.50%	2.75%
Real Rate of Return	<u>3.00%</u>	<u>3.50%</u>
Investment Return	6.50%	6.25%
Price Inflation	3.50%	2.75%
Real Wage Growth	<u>0.75%</u>	<u>1.25%</u>
Wage Inflation	4.25%	4.00%

Demographic Assumptions	Recommendations
Withdrawal	Teachers – Split for males and females and increase rates Police Officers & Firefighters – Increase rates
Disability Retirement	Teachers & Firefighters – Lower rates Police Officers – No Change
Service Retirement	Teachers, Police Officers and Firefighters – Change rates at all ages and/or service levels to match experience
Mortality	Change to RPH 2014 Blue Collar Mortality Table projected with generational mortality for all Plans
Salary Scale	Teachers – No Change Police Officers and Firefighters – Refined merit scale to better match step, retention and longevity increases



Summary of Recommendations

- Asset Methodology – We recommend changing to a five-year smoothing period and maintaining the 20% corridor around market value of assets.
- Amortization Method – We recommend a layered approach based on 15 year periods starting with the 2017 valuation to avoid the potential volatility of shorter amortization periods.
- Administrative Expenses – We recommend changing assumption to 1.20% for Teachers and 2.10% for Police and Fire.



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May 12, 2017

The Board of Trustees
District of Columbia Retirement Board
900 7th Street, NW, 2nd Floor
Washington, DC 20001

Dear Trustees:

Enclosed are 20 copies of the "District of Columbia Retirement Board Experience Investigation for the Five-Year Period Ending September 30, 2015". The investigation includes the economic and demographic experience for the District of Columbia Retirement Board. This report includes the financial impact of the proposed assumption measured as of the October 1, 2016 actuarial valuation.

Please let us know if there are any questions concerning this report.

Sincerely,

Edward J. Koebel, EA, FCA, MAAA
Principal and Consulting Actuary

Jonathan T. Craven, ASA, EA, FCA, MAAA
Consulting Actuary

EJK/JTC:dmw



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District of Columbia Retirement Board

Teachers' Retirement Plan and Police Officers' & Firefighters' Retirement Plan

Experience Investigation for the Five-Year Period Ending September 30, 2015



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CONSULTING, LLC

The experience and dedication you deserve

May 12, 2017

The Board of Trustees
District of Columbia Retirement Board
900 7th Street, NW, 2nd Floor
Washington, DC 20001

Dear Trustees:

We are pleased to submit the results of an investigation of the economic and demographic experience for the District of Columbia Retirement Board. The purpose of the investigation was to assess the reasonability of the actuarial assumptions for the System. This investigation covers the five-year period from October 1, 2010 to September 30, 2015. As a result of the investigation, it is recommended that revised tables be adopted by the Board for future use.

The investigation of the experience of members of the System includes all active and retired members as well as beneficiaries of deceased members.

The results of the investigation indicate that the assumed rates of separation from active service due to withdrawal, disability, death and retirement, and rates of salary increase and post-retirement mortality do not accurately reflect the actual and anticipated experience of the Retirement System. As a result of the investigation, new withdrawal, disability, retirement, salary increase and mortality tables have been developed which reflect more closely the actual experience of the membership.

This report shows a comparison of the actual and expected cases of separation from active service, actual and expected number of deaths, and actual and expected salary increases. These tables are shown based on current assumed expected rates and based on new proposed expected rates. A comparison between the rates of separation and mortality presently in use and the recommended revised rates are also shown in this report.

All rates of separation, mortality and salary increase at each age for each system are shown in the attached tables in Appendix D of this report. In the actuary's judgment, the rates recommended are suitable for use until further experience indicates that modifications are desirable.

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The Board of Trustees
May 12, 2017

The experience investigation was performed by, and under the supervision of, independent actuaries who are members of the American Academy of Actuaries with experience in performing valuations for public retirement systems. The undersigned meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

Respectfully submitted,

A handwritten signature in blue ink, reading 'Edward J. Koebel'.

Edward J. Koebel, EA, FCA, MAAA
Principal and Consulting Actuary

A handwritten signature in blue ink, reading 'Jonathan T. Craven'.

Jonathan T. Craven, ASA, EA, FCA, MAAA
Consulting Actuary

EJK/JTC:dmw



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SECTION I – EXECUTIVE SUMMARY

The following summarizes the findings and recommendations with regard to the assumptions utilized for the District of Columbia Retirement Board. Detailed explanations for the recommendations are found in the sections that follow.

Economic Assumption Changes

The table below lists the three economic assumptions used in the actuarial valuation and the current and recommended rates.

Item	Current	Recommended
Price Inflation	3.50%	2.75%
Investment Return	6.50%	6.25%
Wage Inflation	4.25%	4.00%

Recommended Demographic Assumption Changes

The table below lists a summary of the demographic assumptions that are recommended to be changed based on the experience of the last five years.

Assumption	Recommendations
Withdrawal	Teachers – Split for males and females and increase rates Police Officers & Firefighters – Increase rates
Disability Retirement	Teachers & Firefighters – Lower rates Police Officers – No Change
Service Retirement	Teachers, Police Officers and Firefighters – Change rates at all ages and/or service levels to match experience
Mortality	Change to RPH 2014 Blue Collar Mortality Table projected with generational mortality for all Plans
Salary Scale	Teachers – No Change Police Officers and Firefighters – Refined merit scale to better match step, retention and longevity increases



SECTION I – EXECUTIVE SUMMARY

Recommended Other Method Changes

The table below lists a summary of the actuarial method assumptions and our recommendations going forward for future valuations.

Method	Recommendations
Actuarial Cost Method	No Change to the Entry Age Normal (EAN) Cost Method
Amortization Method	Recommend a layered Unfunded Accrued Liability (UAL) amortization approach beginning with the 2017 valuation. New UAL layers composed of experience gains and losses will be amortized over a closed 15 year period from valuation date they were initially measured. Changes to assumptions and methods would also be captured in the same UAL layers.
Asset Smoothing	Recommend consideration for the Board to move to 5-year smoothing period to recognize investment gains and losses beginning with the 2016 valuation.

Financial Impact

The following tables highlight the impact of the recommended changes on the Unfunded Accrued Liability, Actuarially Determined Employer Contribution (ADEC) and the Funding Ratio on an Actuarial Value basis for each Plan of DCRB.

Teachers' Retirement Plan (\$ in Thousands)

	Valuation Results 2016	Demographic Changes Only	Demographic and Economic Changes
Unfunded Accrued Liability	\$184,164	\$221,034	\$237,508
ADEC Rate	11.51%	12.28%	12.85%
ADEC Amount	\$59,046	\$62,562	\$64,884
Funding Ratio	90.9%	89.3%	88.6%



SECTION I – EXECUTIVE SUMMARY

Police Officers' Retirement Plan **(\$ in Thousands)**

	Valuation Results 2016	Demographic Changes Only	Demographic and Economic Changes
Unfunded Accrued Liability	\$(419,961)	\$(321,015)	\$(301,051)
ADEC Rate	20.69%	21.33%	22.62%
ADEC Amount	\$59,952	\$61,943	\$65,620
Funding Ratio	113.5%	110.0%	109.3%

Firefighters' Retirement Plan **(\$ in Thousands)**

	Valuation Results 2016	Demographic Changes Only	Demographic and Economic Changes
Unfunded Accrued Liability	\$(66,577)	\$(85,487)	\$(75,774)
ADEC Rate	34.26%	29.30%	30.59%
ADEC Amount	\$45,644	\$38,422	\$40,087
Funding Ratio	104.8%	106.2%	105.5%



SECTION II – ECONOMIC ASSUMPTIONS

There are three economic assumptions used in the actuarial valuations performed for DCRB. They are:

- Price Inflation
- Investment Return
- Wage Inflation

Actuarial Standard of Practice (ASOP) No. 27, “*Selection of Economic Assumptions for Measuring Pension Obligations*”, provides guidance to actuaries in selecting economic assumptions for measuring obligations under defined benefit plans and was revised in September 2013. The revised standard now requires that each economic assumption selected by the actuary should be reasonable which means it has the following characteristics:

- It is appropriate for the purpose of the measurement;
- It reflects the actuary’s professional judgment;
- It takes into account historical and current economic data that is relevant as of the measurement date;
- It reflects the actuary’s estimate of future experience, the actuary’s observation of the estimates inherent in market data, or a combination thereof; and
- It has no significant bias (i.e., it is not significantly optimistic or pessimistic), except when provisions for adverse deviation or plan provisions that are difficult to measure are included and disclosed, or when alternative assumptions are used for the assessment of risk.

Each economic assumption should individually satisfy this standard. Furthermore, with respect to any particular valuation, each economic assumption should be consistent with every other economic assumption over the measurement period.

In our opinion, the economic assumptions recommended in this report have been developed in accordance with ASOP No. 27, as revised in September, 2013. The following table shows our recommendation followed by detailed discussions of each assumption.

Item	Current	Recommended
Price Inflation	3.50%	2.75%
Investment Return	6.50%	6.25%
Wage Inflation	4.25%	4.00%



SECTION II – ECONOMIC ASSUMPTIONS

Price Inflation

Background: As can be seen from the table above, assumed price inflation is used as the basis for both the investment return assumption and the wage inflation assumption. These latter two assumptions will be discussed in detail in the following sections.

It is important that the price inflation assumption be consistently applied throughout the economic assumptions utilized in an actuarial valuation. This is called for in ASOP No. 27 and is also required to meet the parameters for determining pension liabilities and expenses under Governmental Accounting Standards Board (GASB) Statements No. 67 and 68.

The current price inflation assumption is 3.50% per year.

Past Experience: The Consumer Price Index, US City Average, All Urban Consumers, CPI (U), has been used as the basis for reviewing historical levels of price inflation. The level of that index in September of each of the last 50 years is provided in Appendix A.

In analyzing this data, annual rates of inflation have been determined by measuring the compound growth rate of the CPI (U) over various time periods. The results are as follows:

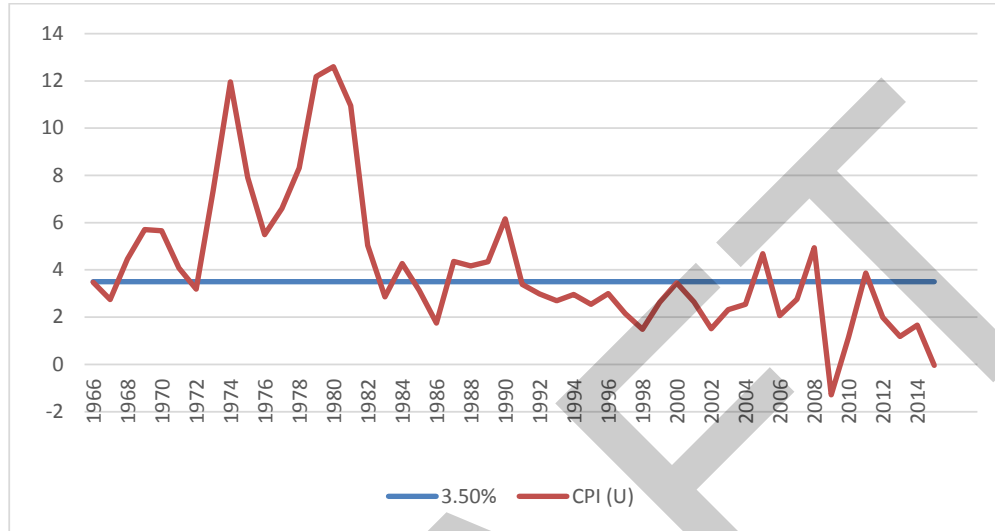
Period (Fiscal Years Ending)	Number of Years	Inflation	Annual Standard Deviation
2006-2015	10	1.81%	1.79%
1996-2005	10	2.64	1.45
1986-1995	10	3.53	1.50
1976-1985	10	7.09	3.39
1966-1975	10	5.62	2.63
1996-2015	20	2.23%	1.79%
1986-2015	30	2.66	1.45
1976-2015	40	3.75	2.94
1966-2015	50	4.12	2.98
1927-2015	88	2.93	3.98

The graph below shows the annual increases in the CPI (U) over the entire 50 year period.



SECTION II – ECONOMIC ASSUMPTIONS

Annual CPI (U) Increases



Recommendation: It is difficult to accurately predict inflation. Inflation’s short-term volatility is illustrated by comparing its average rate over the last 10, 30 and 50 years. Although the 10-year average of 1.81% is lower than the System’s assumed rate of 3.50%, the longer 40 and 50-year averages of 3.75% and 4.12% respectively, are somewhat higher than the System’s rate. The validity of the System’s assumption is, therefore, dependent upon the emphasis one assigns to the short and long-terms.

Current economic forecasts suggest lower inflation but are generally looking at a shorter time period than appropriate for our purposes. In the 2016 OASDI Trustees Report, the Chief Actuary for Social Security bases the 75 year cost projections on an intermediate inflation assumption of 2.6% with a range of 2.0% to 3.2%. We consider that range reasonable and recommend that DCRB lower the current price inflation assumption from 3.50 to 2.75%.

Price Inflation Assumption	
Current	3.50%
Reasonable Range	2.00% - 3.50%
Recommended	2.75%

The change in the price inflation assumption has an impact on the COLA assumption. For the first time, the proposed price inflation assumption is below the 3.0% cap for members hired after



SECTION II – ECONOMIC ASSUMPTIONS

November 1, 1996. We analyzed the variability of the CPI to determine the new proposed COLA assumptions. We recommend changing the COLA assumptions as shown in the following table.

COLA	Current	Proposed
Hired < 11/1/1996	3.50%	3.35%
Hired >= 11/1/1996	3.00%	2.95%

Investment Return

Background: The assumed investment return is one of the most significant assumptions in the annual actuarial valuation process as it is used to discount the expected benefit payments for all active, inactive and retired members of the divisions. Minor changes in this assumption can have a major impact on valuation results. The investment return assumption should reflect the asset allocation target for the funds set by the Board of Trustees.

The current assumption is 6.50%, consisting of a price inflation assumption of 3.50% and a real rate of return assumption of 3.00%. The return assumption is net of investment expenses.

Past Experience: The assets for DCRB are valued using a widely accepted asset-smoothing methodology that fully recognizes the expected investment income and also recognizes 1/7th of each year's investment gain or loss (the difference between actual and expected investment income). The experience over the last nine years is shown in the table below.

Year Ending 9/30	Actuarial Value	Market Value
2007	11.70%	16.40%
2008	(0.23)	(17.17)
2009	(5.86)	(2.64)
2010	1.60	10.38
2011	1.42	2.96
2012	2.72	14.08
2013	3.87	11.41
2014	4.72	8.10
2015	6.14	(4.05)
Average	2.80%	3.86%



SECTION II – ECONOMIC ASSUMPTIONS

The impact of the asset smoothing method can be observed in the table above. Poor asset returns during 2008 and 2009 are reflected in the actuarial value returns through 2015. While important to review and analyze, historical returns over such a short time period are not credible for the purpose of setting the long-term assumed future rate of return.

We next include in our analysis information concerning future expectations for the investment return assumption. Because of the significant variability in past year-to-year results and the inter-play of inflation on those results in the short term, we prefer to base our investment return assumption on the capital market assumptions utilized by the Board in setting investment policy and the asset allocation established by the Board as a result of that policy. This approach is referred to as the building block method in ASOP No. 27.

Analysis: The current capital market assumptions and asset allocation as provided by the System are shown in Appendix B. We further assumed that investment returns approximately follow a lognormal distribution with no correlation between years. The results below provide an expected range of real rates of return over a 50-year time horizon. Looking at one year results produces an expected mean real return of 6.11% but also has a high standard deviation or measurement of volatility. By expanding the time horizon, the average return changes slightly but the volatility declines significantly. The following table provides a summary of results.

Time Span In Years	Mean Real Return	Standard Deviation	Real Returns by Percentile				
			5 th	25 th	50 th	75 th	95 th
1	6.11%	13.70%	-14.77%	-3.44%	5.31%	14.85%	30.12%
5	5.41	6.07	-4.20	1.30	5.31	9.47	15.76
10	5.33	4.28	-1.50	2.46	5.31	8.24	12.59
20	5.28	3.03	0.44	3.29	5.31	7.37	10.41
30	5.27	2.47	1.32	3.65	5.31	6.99	9.46
40	5.26	2.14	1.85	3.87	5.31	6.76	8.89
50	5.26	1.91	2.21	4.03	5.31	6.61	8.51

Based on this analysis there is a 50% likelihood that the average real rate of return over a 50-year period will be 5.31%. It can also be inferred that for the 10-year time span, 5% of the resulting real rates of return will be below -1.50% and 95% were above that. As the time span increases, the results begin to merge. Over a 50-year time span, the results indicate there is a 25% chance that real returns will be below 4.03% and a 25% chance they will be above 6.61%. In other words, there is a 50% chance the real returns will be between 4.03% and 6.61 %.

Nominal Return Ranges: The returns shown above are gross real rates of return. To get nominal rates of return that are net of investment fees, the gross real returns must be adjusted by expected inflation and investment expenses. Using a building block approach that includes our proposed inflation assumption of 2.75% and the real return projection results outlined above, the following



SECTION II – ECONOMIC ASSUMPTIONS

table illustrates a range for the investment return assumption of the 25th to 75th percentile real returns over the 50 year time span plus the recommended inflation assumption less the recommended expense ratio.

Item	25 th Percentile	50 th Percentile	75 th Percentile
Real Rate of Return	4.03%	5.31%	6.61%
Proposed Inflation	2.75	2.75	2.75
Investment Expenses	<u>(0.25)</u>	<u>(0.25)</u>	<u>(0.25)</u>
Net Investment Return	6.53%	7.81%	9.11%

Using the same methodology with the inflation assumption used by the investment consultant yields the following results.

Item	25 th Percentile	50 th Percentile	75 th Percentile
Real Rate of Return	4.03%	5.31%	6.61%
Assumed Inflation	2.40	2.40	2.40
Investment Expenses	<u>(0.25)</u>	<u>(0.25)</u>	<u>(0.25)</u>
Net Investment Return	6.18%	7.46%	8.76%

Using the same methodology with the targeted inflation rate of the Federal Reserve Board yields the following results.

Item	25 th Percentile	50 th Percentile	75 th Percentile
Real Rate of Return	4.03%	5.31%	6.61%
FRB Targeted Inflation	2.00	2.00	2.00
Investment Expenses	<u>(0.25)</u>	<u>(0.25)</u>	<u>(0.25)</u>
Net Investment Return	5.78%	7.06%	8.36%

As can be seen by the tables above, nominal rates using this building block methodology are highly dependent on the inflation assumption. Our proposed inflation assumption is very long term in nature because the resulting nominal net investment return assumption is also used as the discount rate for all projected future benefit payments of the plan. These projected benefit payments can span up to 100 years. Investment consultants customarily rely more on available data in the long term bond markets which have a shorter duration. The Federal Reserve Board is trying to create an inflation rate which it deems desirable. The bottom line is that nobody knows what the inflation rate is going to be in the future.



SECTION II – ECONOMIC ASSUMPTIONS

Using our inflation assumption and the capital market assumptions of the investment consultant, there is 50% chance that the net nominal return will be between 6.53% and 9.11% over a 50-year period. Based on this type of analysis, the most likely nominal rate of return would be 7.81% and we would recommend 7.75% because it is close to the center of the distribution. This rate would indicate that future asset gains and losses should approximately offset each other if the assumption is realized. This is rate that ASOP 27 guides us as actuaries to recommend as the most likely outcome. Using the investment consultant's inflation assumption of the Federal Reserve Board's target rate of inflation, the nominal rate would be less. We do realize in the real world that actuarial gains are more desirable than actuarial losses and as such we recommend a lower investment return assumption to insure against adverse experience.

Investment Return Assumption	
Current	6.50%
Recommended	6.25%



SECTION II – ECONOMIC ASSUMPTIONS

Wage Inflation

Background: The assumed future increases in salaries consist of an inflation component and a component for promotion and longevity, often called merit increases. The latter are generally age and or service related, and will be dealt with in the demographic assumption section of the report. Wage inflation normally is above price inflation as a reflection of the overall return on labor in the economy. The current wage inflation assumption is 4.25%, or 0.75% above current price inflation.

Past Experience: The Social Security Administration publishes data on wage growth in the United States. Appendix C shows the last 50 calendar years' data. As with our analysis of inflation, we provide below wage inflation and a comparison with price inflation over various time periods. Since wage data is only available through 2014 we use that year as the starting point.

Period	Wage Inflation	Price Inflation	Real Wage Growth
2005-2014	2.69%	1.81%	0.88%
1995-2004	4.14	2.64	1.50
1985-1994	3.94	3.53	0.41
1975-1984	7.23	7.09	0.14
1965-1974	5.78	5.62	0.16
1995-2014	3.41	2.23	1.18
1985-2014	3.59	2.66	0.93
1975-2014	4.49	3.75	0.74
1965-2014	4.75	4.12	0.63

Thus over the last 50 years, annual real wage growth as measured by the Social Security Administration has averaged 0.63%.



SECTION II – ECONOMIC ASSUMPTIONS



Recommendation: As with price inflation, we again look at the 2016 OASDI Trustees Report. The Chief Actuary for Social Security bases the 75 year cost projections on a national wage growth assumption 1.20% greater than the price inflation assumption of 2.60%. We concur in general with a range of 0.50% to 1.80%, and recommend use of a 1.25% per year rate at the current time which, when added to the proposed Price Inflation rate, will make the recommended Wage Inflation Assumption rate equal to 4.00%.

Wage Inflation Assumption		
Current	4.25%	
	Reasonable Range	
Real Wage Growth	0.50%	1.80%
Proposed Inflation	<u>2.75</u>	<u>2.75</u>
Total	3.25%	4.55%
Recommended	4.00%	



SECTION III– ACTUARIAL METHODS

There are certain actuarial methods that are part of the Funding Policy and are used in the actuarial valuations performed for the District of Columbia. They are:

- Actuarial Cost Method
- Amortization Method
- Asset Smoothing Method

Actuarial Cost Method: The Actuarial Standard of Practice (ASOP) No. 4, “*Measuring Pension Obligations and Determining Pension Plan Costs or Contributions*”, provides guidance to actuaries in determining periodic costs or actuarially determined contributions. The Standard defines an Actuarial Cost Method as a procedure for allocating the actuarial present value of projected benefits to time periods, usually in the form of a normal cost and an actuarial accrued liability.

The current actuarial cost method is the Entry Age Normal Method under which the actuarial present value of the projected benefits of each individual included in an actuarial valuation is allocated on a level basis over the earnings of the individual between entry age and assumed exit age. The portion of this actuarial present value allocated to a valuation year is called the normal cost. The portion of this actuarial present value not provided for at a valuation date by the actuarial present value of future normal costs is called the Actuarial accrued liability.

The Entry Age Normal Cost Method is by far the most common actuarial cost method used for public sector pension plans. It is also the required actuarial cost method for measuring accounting costs under GASB Statements 67 and 68. **We believe this is the best method for your plans and recommend continued use of it.**

Amortization Method: The Actuarial Standard of Practice (ASOP) No. 4, “*Measuring Pension Obligations and Determining Pension Plan Costs or Contributions*” also defines an amortization method as a method under a contribution allocation procedure or cost allocation procedure for determining the amount, timing, and pattern of recognition of the unfunded actuarial accrued liability.

A funding policy was adopted by the Board in 2012 which included adopting a closed level dollar amortization of the Unfunded Actuarial Accrued Liability (UAAL) over 20 years. The period is to decrease by one year per year until a funded ratio of 100% is attained. The amortization period reached 17 years as of the October 1, 2015 actuarial valuation. The Police Officers’ and Firefighters’ Retirement Plan was over 100% funded as of October 1, 2015 while the Teachers’ Retirement Plan was not.



SECTION III– ACTUARIAL METHODS

Under the current method, all future changes in the UAAL will be amortized by a shrinking period. As amortization periods decrease, payments will become increasingly more volatile with certain experience. To avoid the volatility of short amortization periods, **we recommend new UAAL layers composed of experience gains and losses be amortized over a closed 15-year period from the valuation date they are initially measured.** Also, changes to assumptions and methods would also be captured in any UAAL layers.

Therefore, the UAAL as of October 1, 2017 (“Transitional UAAL”) will be amortized over 15 years and each subsequent additional increase or decrease in UAAL will be amortized over a separate 15-year period from the valuation date it is measured. Under this methodology, after 15 years, there would be a minimum of 15 individual amortization bases.

Asset Smoothing Method: The Actuarial Standard of Practice (ASOP) No. 44, “*Selection and Use of Asset Valuation Methods for Pension Valuations*” provides guidance to actuaries when performing actuarial valuations for defined benefit plans.

Asset smoothing is used to dampen the impact of volatility of market value returns on the required contributions to the plan. The current seven year smoothing method was implemented in the October 1, 2008 actuarial valuation. Although some in the actuarial profession use asset smoothing periods longer than five years, it is somewhat uncommon and various actuarial organizations have expressed their opinions recently:

- The Conference of Consulting Actuaries (CCA) Public Plan Community White Paper endorses smoothing periods of 3 years to 10 years with market value corridors on smoothing periods of 5 to 10 years.
- The Report of the Blue Ribbon Panel of the Society of Actuaries on Public Pension Plan Funding recommends limiting smoothing periods to 5 years.
- The Government Finance Officers Association (GFOA) Best Practice recommends asset smoothing periods of ideally 5 years or less but no longer than 10 years with market value corridors for smoothing periods greater than 5 years.

We recommend the Board consider changing the asset smoothing to a five year smoothing method with a 20% corridor around the market value of assets.



SECTION IV – DEMOGRAPHIC ASSUMPTIONS

There are several demographic assumptions used in the actuarial valuations performed for the District of Columbia Retirement Board. They are:

- Rates of Mortality
- Rates of Withdrawal
- Rates of Disability Retirement
- Rates of Service Retirement
- Rates of Salary Increase

The Actuarial Standards Board has issued Actuarial Standard of Practice (ASOP) No. 35, *“Selection of Demographic and Other Noneconomic Assumptions for Measuring Pension Obligations”*, which provides guidance to actuaries in selecting demographic assumptions for measuring obligations under defined benefit plans. In our opinion, the demographic assumptions recommended in this report have been developed in accordance with ASOP No. 35.

The purpose of a study of demographic experience is to compare what actually happened to the membership during the study period (October 1, 2010 through September 30, 2015) with what was expected to happen based on the assumptions used in the most recent Actuarial Valuations.

Detailed tabulations by age, service and/or gender are performed over the entire study period. These tabulations look at all active and retired members during the period as well as separately annotating those who experience a demographic event, also referred to as a decrement. In addition, the tabulation of all members together with the current assumptions permits the calculation of the number of expected decrements during the study period.

If the actual experience differs significantly from the overall expected results, or if the pattern of actual decrements, or rates of decrement, by age, gender, or service does not follow the expected pattern, new assumptions are recommended. Recommended changes usually do not follow the exact actual experience during the observation period. Judgment is required to extrapolate future experience from past trends and current member behavior. In addition non-recurring events, such as early retirement windows, need to be taken into account in determining the weight to give to recent experience.

The remainder of this section presents the results of the demographic study. We have prepared tables that show a comparison of the actual and expected decrements and the overall ratio of actual to expected results (A/E Ratios) under the current assumptions. If a change is being proposed, the revised A/E Ratios are shown as well. Salary adjustments, other than the economic assumption for wage inflation discussed in the previous section, are treated as demographic assumptions.



SECTION IV – DEMOGRAPHIC ASSUMPTIONS - RATES OF MORTALITY

The mortality assumption is one of the most important demographic assumptions because it predicts the length of time pension benefits will be paid to both current and future retirees and beneficiaries. If retirees and beneficiaries live longer than expected, actuarial losses are realized.

Rates of mortality continue to decline today mostly due to advancements in medicine and public health. The continued increases in life expectancies has prompted the actuarial profession to require actuaries to include assumptions of mortality improvement in the mortality tables used in the valuations and option factors.

In order to develop an appropriate mortality table, we need as much data as possible. Therefore, we have combined the mortality experience of the Teachers, Police and Firefighters to analyze the mortality assumption. We also included mortality experience from the previous 2006-2010 study to increase the credibility of the data.

The health of disabled retirees is generally worse than healthy retirees and therefore we have a different mortality assumption for disabled retirees.

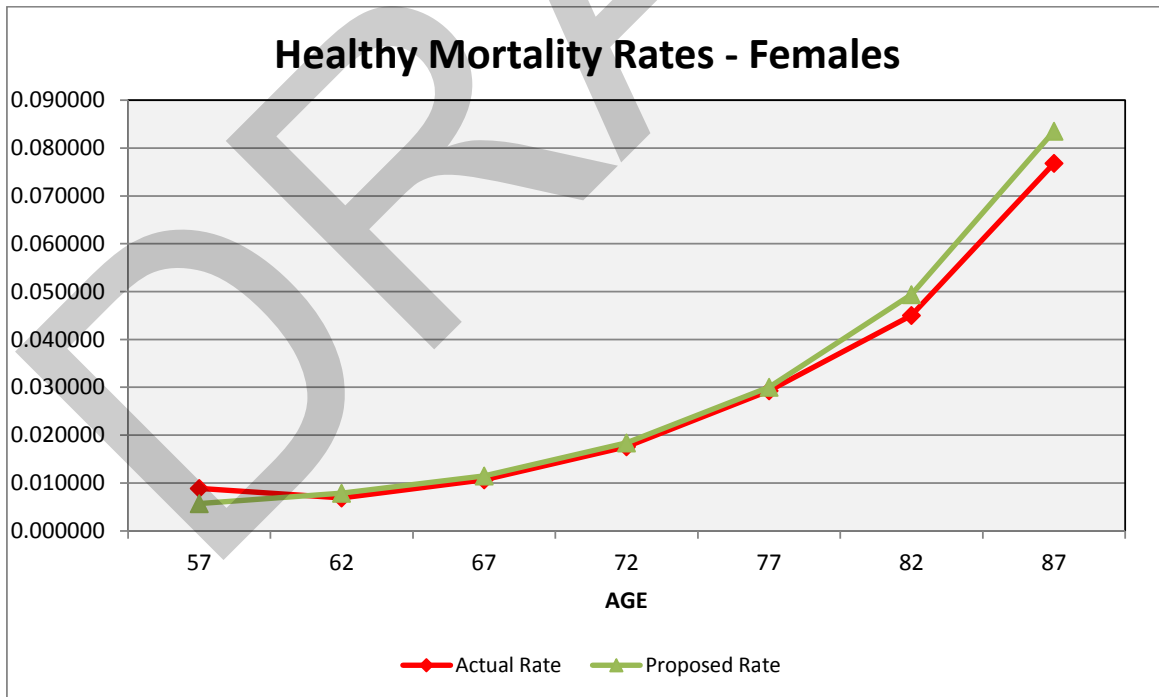
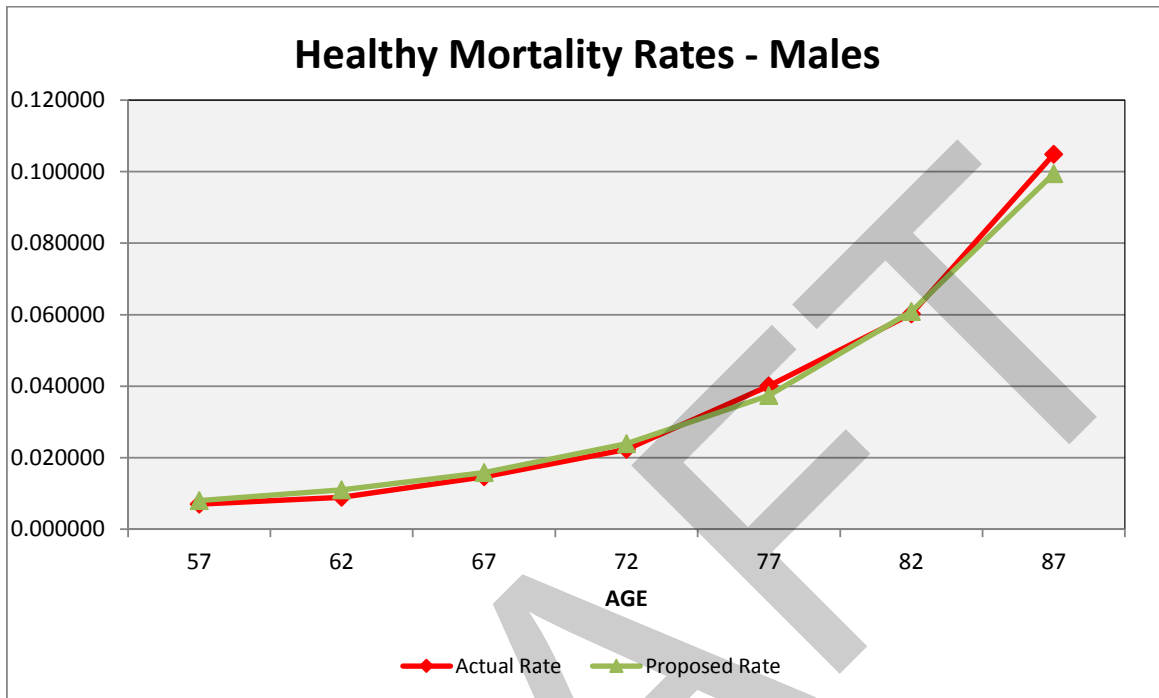
Healthy Lives Mortality

The first step of selecting a mortality table is to compare published mortality tables to the mortality experienced by the members of the plan. This is done by projecting the mortality table rates to the period of the experience. The actual mortality experience is from the July 1, 2006 – June 30, 2015 period so we will project the mortality rates to 2011 for comparison to the actual experience.

After testing many standard mortality tables against the mortality experience of the 2006-2015 study period, we selected the RPH 2014 Blue Collar Mortality Table with ages set back one year for males as the best fit table when projected back to 2011. The following graphs show the actual mortality rates during the study period and the mortality rates of the RPH 2014 Blue Collar Mortality Table with ages set back one year for males projected to 2011.



SECTION IV – DEMOGRAPHIC ASSUMPTIONS - RATES OF MORTALITY



A comparison of actual deaths and expected deaths using the proposed mortality table with ratios of actual deaths to expected deaths is shown below:



SECTION IV – DEMOGRAPHIC ASSUMPTIONS - RATES OF MORTALITY

CENTRAL AGE OF GROUP	NUMBER OF DEATHS AMONG SERVICE RETIREMENTS AND BENEFICIARIES					
	MALE			FEMALE		
	Actual	Expected	Ratio of Actual to Expected	Actual	Expected	Ratio of Actual to Expected
Under 60	59	58	1.017	48	22	2.182
62	95	118	0.805	55	63	0.873
67	164	177	0.927	115	124	0.927
72	169	181	0.934	167	175	0.954
77	173	162	1.068	243	249	0.976
82	139	140	0.993	300	329	0.912
87	115	109	1.055	364	396	0.919
92	80	60	1.333	356	369	0.965
95 & Over	35	33	1.061	287	270	1.063
TOTAL	1,029	1,038	0.991	1,935	1,997	0.969

The next step is to project the mortality rates into the future in order to allow for future expected mortality improvement.

The Society of Actuaries strongly recommends projecting mortality improvement generationally. Generational projection creates a unique mortality table for each year of birth. For example, the mortality rate at age 65 for someone who is now 40 will be the current age 65 rate with 25 years of projection applied. For the same person, the mortality rate at age 70 will be the current age 70 rate with 30 years of projection applied.

The other form of projection is called a static projection where the base rates of mortality are projected to a future date or for a specific number of years. The projection is independent from the member's year of birth. Generational projection is theoretically more accurate where a static projection will overstate liabilities for some and understate liabilities for others.

We recommend projecting the RPH Blue Collar Mortality Table with ages set back 1 year for males generationally using Scale BB for both active and retired members.

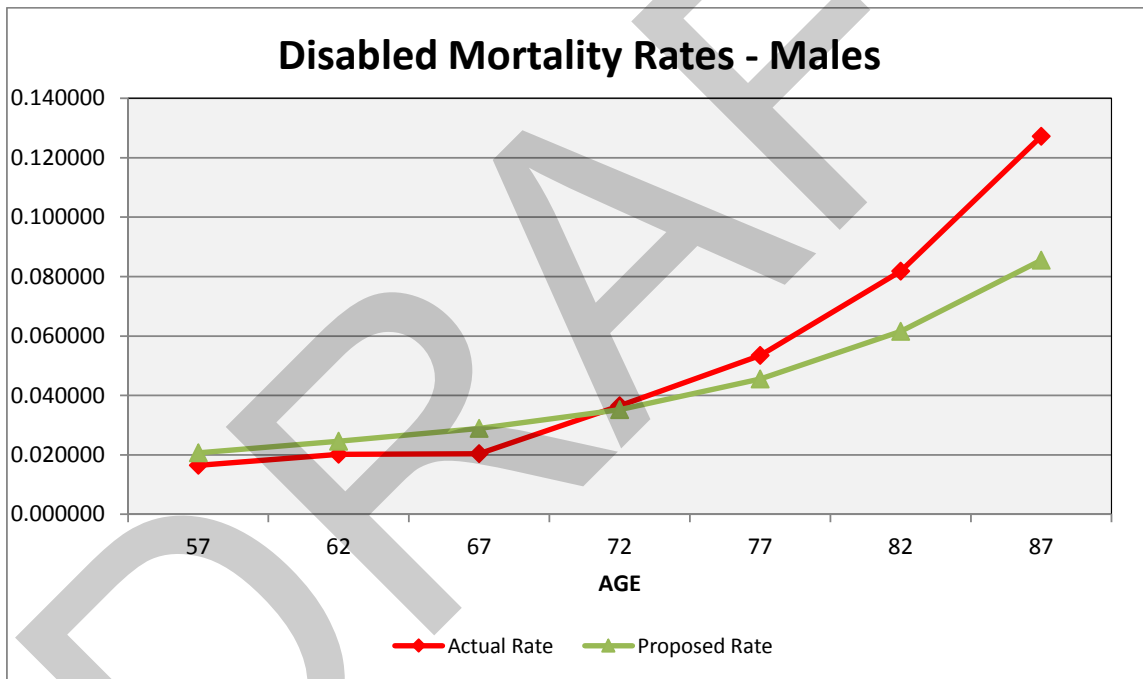


SECTION IV– DEMOGRAPHIC ASSUMPTIONS - RATES OF MORTALITY

Disabled Lives Mortality

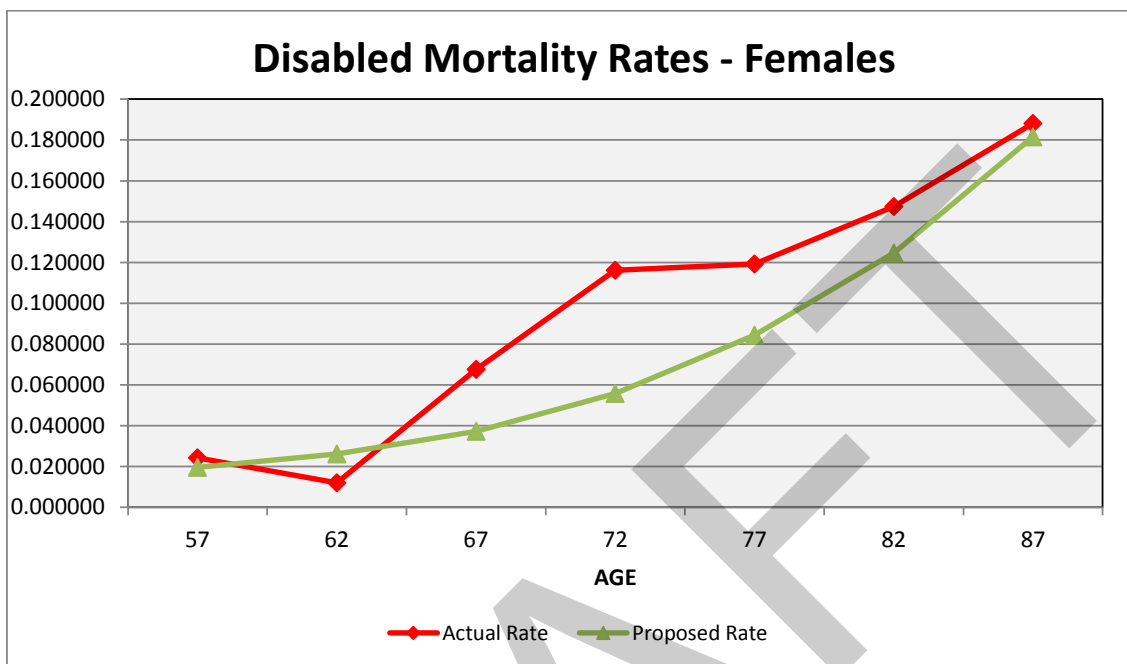
Disabled lives mortality is much harder to predict than healthy lives mortality since the many reasons for disability are numerous in nature with differing impacts on mortality. Another reason is the much smaller number of disabled retirees which make their data less credible.

We have selected the RPH 2014 Disabled Retiree Mortality Table with female rates set forward 7 years and male rates set back 6 years for the mortality table for disabled lives. Because of the smaller sample size, we picked the assumption so there is a margin for adverse selection instead of projecting the mortality table for future improvement. The following graphs show the mortality experience of the study period compared with what the proposed assumption would have predicted:





SECTION IV – DEMOGRAPHIC ASSUMPTIONS - RATES OF MORTALITY



The following table show the actual disabled retiree deaths compared with what would have been predicted by our proposed assumption. Please note the margin for males is 17.4% and the margin for females is 18.6%. This margin allows for adverse deviation.

CENTRAL AGE OF GROUP	NUMBER OF DEATHS AMONG DISABILITY RETIREMENTS					
	MALE			FEMALE		
	Actual	Expected	Ratio of Actual to Expected	Actual	Expected	Ratio of Actual to Expected
Under 50	20	10	2.000	7	9	0.778
52	5	11	0.455	10	7	1.429
57	20	25	0.800	14	11	1.273
62	39	47	0.830	8	18	0.444
67	44	62	0.710	39	22	1.773
72	72	69	1.043	48	23	2.087
77	84	72	1.167	44	31	1.419
82	118	89	1.326	55	46	1.196
87	114	77	1.481	60	58	1.034
92	81	47	1.723	37	44	0.841
95 & Over	25	20	1.250	23	22	1.045
TOTAL	622	529	1.176	345	291	1.186



SECTION IV – DEMOGRAPHIC ASSUMPTIONS - TEACHERS' RETIREMENT PLAN

RATES OF WITHDRAWAL

COMPARISON OF ACTUAL AND EXPECTED WITHDRAWALS FROM ACTIVE SERVICE

SERVICE	NUMBER OF WITHDRAWALS		
	Actual	Expected	Ratio of Actual to Expected
	Withdrawals with less than 5 years of service		
Under 1	54	42	1.286
1	743	729	1.019
2	750	609	1.232
3	506	399	1.268
4	236	200	1.180
TOTAL	2,289	1,979	1.157

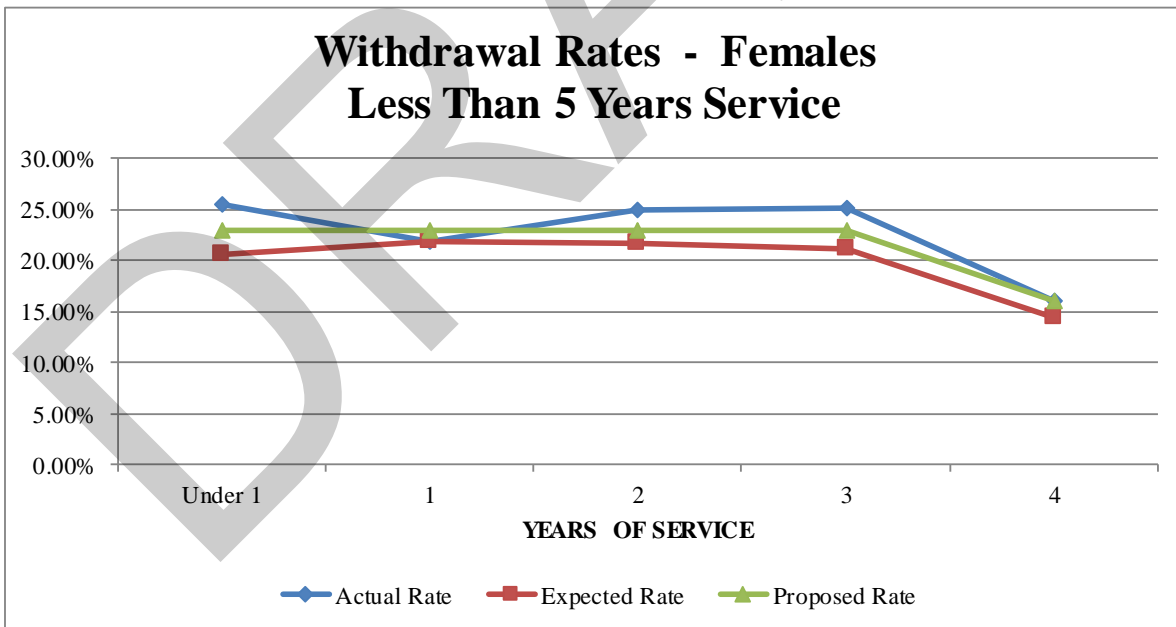
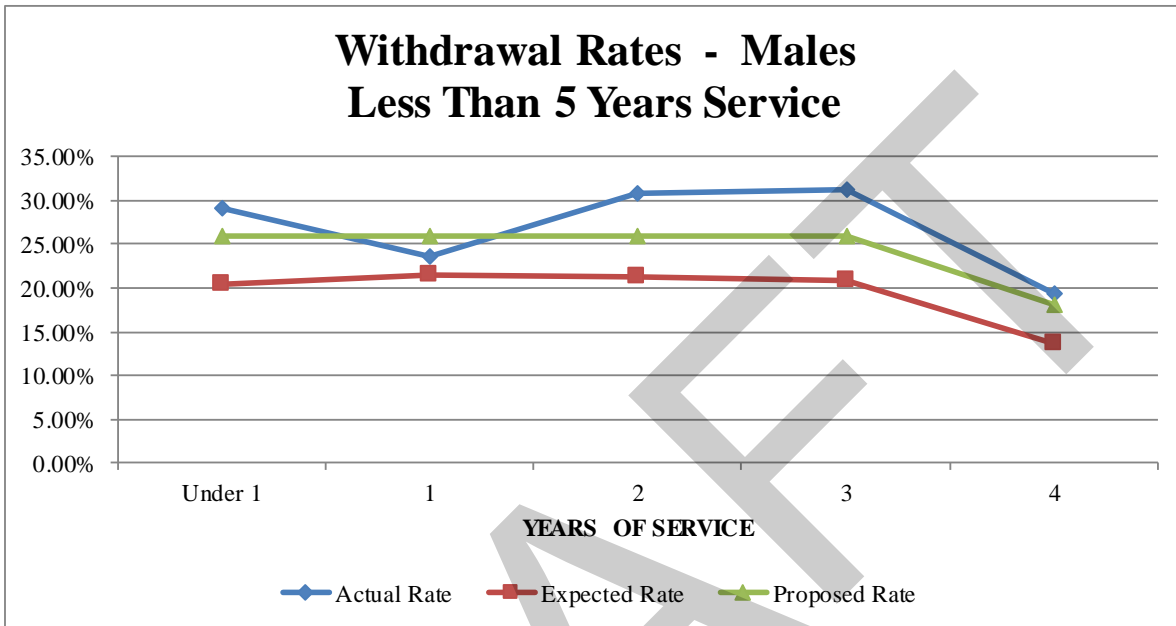
CENTRAL AGE OF GROUP	NUMBER OF WITHDRAWALS		
	Actual	Expected	Ratio of Actual to Expected
	Withdrawals with 5 or more years of service		
25	41	32	1.281
30	163	153	1.065
35	155	139	1.115
40	178	123	1.447
45	109	83	1.313
50	93	63	1.476
55	78	53	1.472
60	90	39	2.308
TOTAL	907	685	1.324

The following graph shows a comparison of the present, actual and proposed rates of withdrawal.



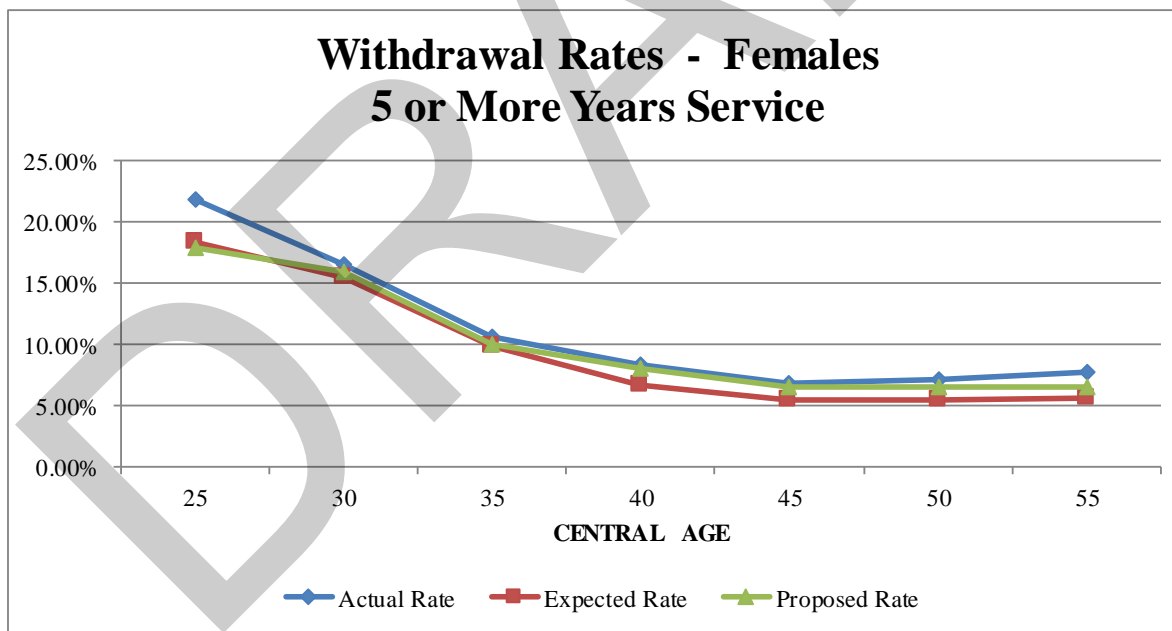
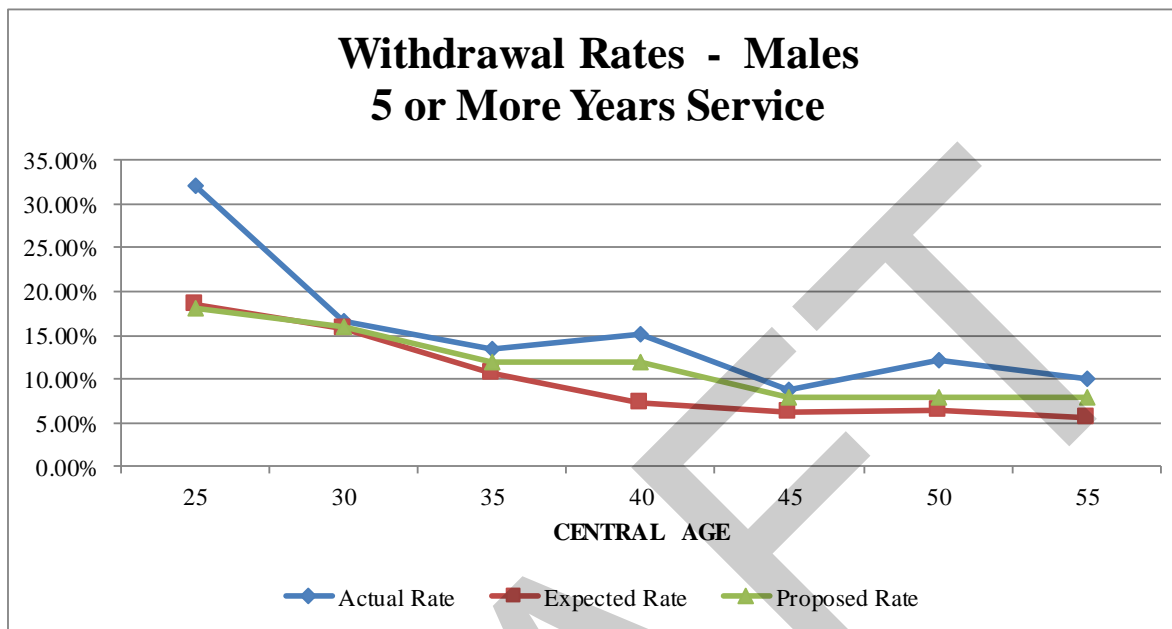
SECTION IV – DEMOGRAPHIC ASSUMPTIONS - TEACHERS' RETIREMENT PLAN

RATES OF WITHDRAWAL FOR ACTIVE MEMBERS





SECTION IV – DEMOGRAPHIC ASSUMPTIONS - TEACHERS' RETIREMENT PLAN



The rates of withdrawal adopted by the Board are used to determine the expected number of separations from active service which will occur as a result of resignation or dismissal. The preceding results indicate that the actual number of withdrawals is somewhat more than expected at less than 5 years of service and even more so at 5 or more years of service. Actual withdrawals were also more than expected during the 2006-2010 period. In addition, we reviewed withdrawals



SECTION IV – DEMOGRAPHIC ASSUMPTIONS - TEACHERS' RETIREMENT PLAN

for males and females separately and found that males are withdrawing at approximately 3% higher rates than females.

Therefore, first, we are recommending withdrawal rates be split for males and females. And second, we are recommending changing the age and service parameters used in applying the rates. Currently, there are different age based withdrawal rates for less than 4 years of service, 5 to 10 years of service, and 10 or more years of service. We recommend simplifying the rate structure into a select and ultimate format with service based rates for all members with less than 5 years of service and age based rates for all members with 5 or more years of service. Last, we are recommending an increase in the withdrawal rates for ages above 30.

SERVICE	RATES OF WITHDRAWAL		
	Less than 5 years of service		
	Present	Proposed	
		MALES	FEMALES
< 1	NA	26.00%	23.00%
1	NA	26.00%	23.00%
2	NA	26.00%	23.00%
3	NA	26.00%	23.00%
4	NA	18.00%	16.00%

AGE	RATES OF WITHDRAWAL		
	5 or more years of service		
	Present	Proposed	
		MALES	FEMALES
25	20.00%	18.00%	18.00%
30	16.00%	16.00%	16.00%
35	14.00%	12.00%	10.00%
40	12.00%	12.00%	8.00%
45	10.00%	8.00%	6.50%
50	10.00%	8.00%	6.50%
55	10.00%	8.00%	6.50%



SECTION IV – DEMOGRAPHIC ASSUMPTIONS - TEACHERS' RETIREMENT PLAN

COMPARATIVE RATES OF WITHDRAWAL

COMPARISON OF ACTUAL AND EXPECTED WITHDRAWALS FROM ACTIVE SERVICE BASED ON PROPOSED RATES

SERVICE	NUMBER OF WITHDRAWALS - MALES		
	Actual	Expected	Ratio of Actual to Expected
	Withdrawals with less than 5 years of service		
Under 1	14	12	1.167
1	193	213	0.906
2	230	194	1.186
3	153	128	1.195
4	66	61	1.082
TOTAL	656	608	1.079

SERVICE	NUMBER OF WITHDRAWALS - FEMALES		
	Actual	Expected	Ratio of Actual to Expected
	Withdrawals with less than 5 years of service		
Under 1	40	36	1.111
1	550	581	0.947
2	520	479	1.086
3	353	324	1.090
4	170	169	1.006
TOTAL	1,633	1,589	1.028


SECTION IV – DEMOGRAPHIC ASSUMPTIONS - TEACHERS' RETIREMENT PLAN

CENTRAL AGE OF GROUP	NUMBER OF WITHDRAWALS - MALES		
	Actual	Expected	Ratio of Actual to Expected
	Withdrawals with 5 or more years of service		
25	8	5	1.600
30	33	32	1.031
35	47	42	1.119
40	63	50	1.260
45	33	30	1.100
50	36	24	1.500
55	22	18	1.222
60	27	15	1.800
TOTAL	269	216	1.245

CENTRAL AGE OF GROUP	NUMBER OF WITHDRAWALS - FEMALES		
	Actual	Expected	Ratio of Actual to Expected
	Withdrawals with 5 or more years of service		
25	33	27	1.222
30	130	126	1.032
35	108	102	1.059
40	115	110	1.045
45	76	71	1.070
50	57	52	1.096
55	56	47	1.191
60	63	34	1.853
TOTAL	638	569	1.121



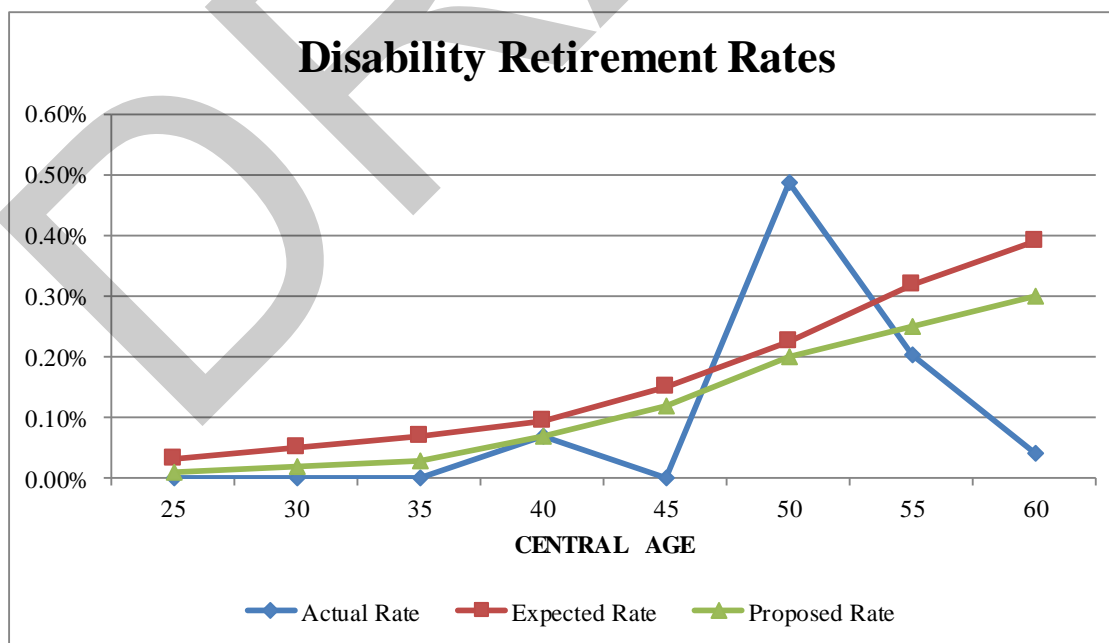
SECTION IV – DEMOGRAPHIC ASSUMPTIONS - TEACHERS' RETIREMENT PLAN

RATES OF DISABILITY RETIREMENT

COMPARISON OF ACTUAL AND EXPECTED DISABILITY RETIREMENTS

CENTRAL AGE OF GROUP	NUMBER OF DISABILITIES		
	Actual	Expected	Ratio of Actual to Expected
25	0	1	0.000
30	0	2	0.000
35	0	2	0.000
40	2	3	0.667
45	0	3	0.000
50	10	5	2.000
55	5	8	0.625
60+	1	12	0.083
TOTAL	18	36	0.500

The following graphs show a comparison of the present, actual, and proposed rates of disability retirements.





SECTION IV – DEMOGRAPHIC ASSUMPTIONS - TEACHERS' RETIREMENT PLAN

During the period under investigation, the actual rates of disability retirement were less than expected. A similar pattern of disability retirements was seen in the last experience investigation. Therefore, we recommend the rates of disability retirement be lowered again to more closely reflect the experience of the System.

The following table shows a comparison between the present disability retirement rates and the proposed rates.

COMPARATIVE RATES OF DISABILITY RETIREMENT

AGE	RATES OF DISABILITY RETIREMENT	
	Present	Proposed
25	0.03%	0.01%
30	0.05%	0.02%
35	0.07%	0.03%
40	0.09%	0.07%
45	0.15%	0.12%
50	0.22%	0.20%
55	0.32%	0.25%
60	0.40%	0.30%

COMPARISON OF ACTUAL AND EXPECTED DISABILITY RETIREMENTS BASED ON PROPOSED RATES

CENTRAL AGE OF GROUP	NUMBER OF DISABILITIES		
	Actual	Expected	Ratio of Actual to Expected
25	0	0	0.000
30	0	1	0.000
35	0	1	0.000
40	2	2	1.000
45	0	3	0.000
50	10	4	2.500
55	5	6	0.833
60+	1	13	0.077
TOTAL	18	30	0.600



SECTION IV – DEMOGRAPHIC ASSUMPTIONS - TEACHERS' RETIREMENT PLAN

RATES OF SERVICE RETIREMENT

COMPARISON OF ACTUAL AND EXPECTED RETIREMENTS

AGE	NUMBER OF SERVICE RETIREMENTS Under 30 Years of Service		
	Actual	Expected	Ratio of Actual to Expected
Under 55	45	22	2.045
55	22	13	1.692
56	24	13	1.846
57	18	13	1.385
58	24	18	1.333
59	22	19	1.158
60	51	50	1.020
61	38	38	1.000
62	60	71	0.845
63	61	52	1.173
64	42	41	1.024
65	41	31	1.323
66	40	23	1.739
67	20	16	1.250
68	23	12	1.917
69	10	7	1.429
70	10	10	1.000
71	6	6	1.000
72	7	4	1.750
73	7	3	2.333
74	1	2	0.500
SUBTOTAL	572	464	1.233
75+	6	11	0.545
TOTAL	578	475	1.217



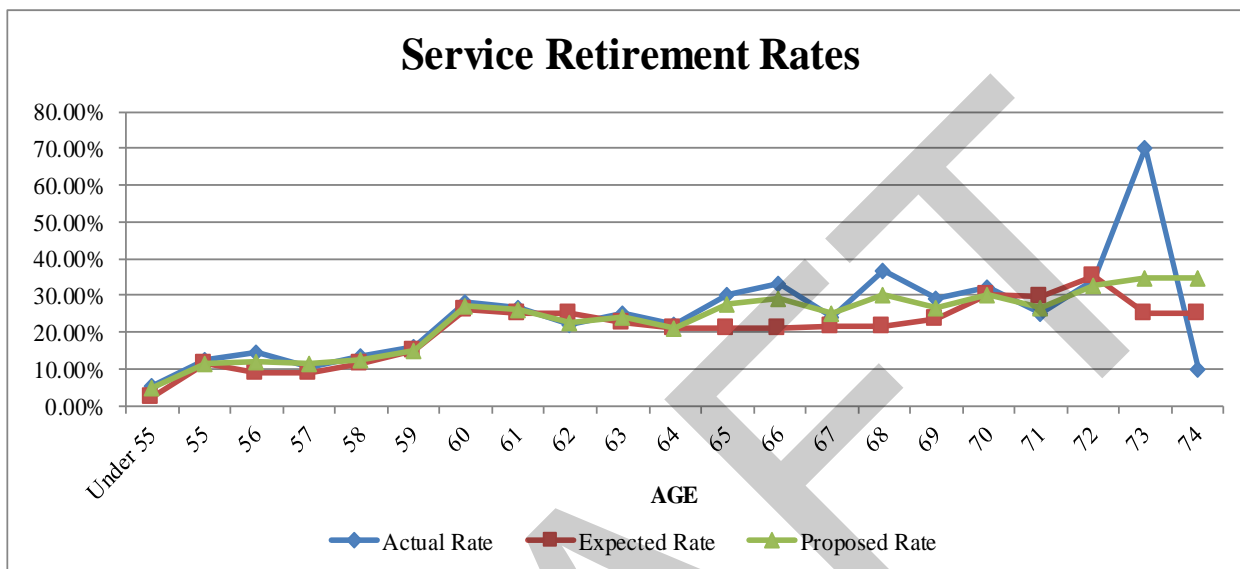
SECTION IV – DEMOGRAPHIC ASSUMPTIONS - TEACHERS' RETIREMENT PLAN

AGE	NUMBER OF SERVICE RETIREMENTS 30 or More Years of Service		
	Actual	Expected	Ratio of Actual to Expected
Under 55	0	1	0.000
55	11	17	0.647
56	16	12	1.333
57	11	12	0.917
58	14	13	1.077
59	24	23	1.043
60	28	23	1.217
61	25	22	1.136
62	20	19	1.053
63	13	15	0.867
64	16	14	1.143
65	20	12	1.667
66	8	8	1.000
67	8	8	1.000
68	9	7	1.286
69	7	6	1.167
70	6	5	1.200
71	2	4	0.500
72	3	6	0.500
73	7	2	3.500
74	0	0	0.000
SUBTOTAL	248	229	1.083
75+	3	8	0.375
TOTAL	251	237	1.059



SECTION IV – DEMOGRAPHIC ASSUMPTIONS - TEACHERS' RETIREMENT PLAN

The following graphs show a comparison of the present and actual rates of service retirements.



The preceding results indicate that for service retirements of members, the actual number of retirements was more than the expected number over this period. We recommend the rates of retirement be revised to more closely reflect the experience of the System.

The following table shows a comparison between the present service retirement rates and the proposed rates.



SECTION IV – DEMOGRAPHIC ASSUMPTIONS - TEACHERS' RETIREMENT PLAN

COMPARATIVE RATES OF SERVICE RETIREMENT

AGE	RATES OF SERVICE RETIREMENT			
	Less than 30 years of service		30 or more years of service	
	Present	Proposed	Present	Proposed
50	2.5%	5.0%	2.5%	5.0%
51	2.5%	5.0%	2.5%	5.0%
52	2.5%	5.0%	2.5%	5.0%
53	2.5%	5.0%	2.5%	5.0%
54	2.5%	5.0%	2.5%	5.0%
55	6.0%	9.0%	33.0%	22.0%
56	6.0%	9.0%	19.0%	22.0%
57	6.0%	9.0%	19.0%	20.0%
58	9.0%	10.0%	19.0%	20.0%
59	10.0%	10.0%	25.0%	25.0%
60	27.0%	27.0%	25.0%	28.0%
61	25.0%	25.0%	25.0%	28.0%
62	25.0%	22.0%	25.0%	25.0%
63	22.0%	25.0%	25.0%	22.0%
64	20.0%	20.0%	25.0%	25.0%
65	20.0%	25.0%	25.0%	35.0%
66	20.0%	30.0%	25.0%	25.0%
67	20.0%	25.0%	25.0%	25.0%
68	20.0%	30.0%	25.0%	30.0%
69	20.0%	25.0%	30.0%	30.0%
70	30.0%	30.0%	30.0%	30.0%
71	25.0%	25.0%	40.0%	30.0%
72	25.0%	35.0%	50.0%	30.0%
73	25.0%	35.0%	25.0%	35.0%
74	25.0%	35.0%	25.0%	35.0%
75	100.0%	100.0%	100.0%	100.0%



SECTION IV – DEMOGRAPHIC ASSUMPTIONS - TEACHERS' RETIREMENT PLAN

COMPARISON OF ACTUAL AND EXPECTED SERVICE RETIREMENTS BASED ON PROPOSED RATES

AGE	NUMBER OF SERVICE RETIREMENTS Under 30 Years of Service		
	Actual	Expected	Ratio of Actual to Expected
Under 55	45	48	0.938
55	22	19	1.158
56	24	19	1.263
57	18	19	0.947
58	24	21	1.143
59	22	19	1.158
60	51	50	1.020
61	38	38	1.000
62	60	63	0.952
63	61	59	1.034
64	42	41	1.024
65	41	38	1.079
66	40	35	1.143
67	20	21	0.952
68	23	18	1.278
69	10	9	1.111
70	10	10	1.000
71	6	6	1.000
72	7	6	1.167
73	7	4	1.750
74	1	3	0.333
SUBTOTAL	572	546	1.048
75+	6	11	0.545
TOTAL	578	557	1.038



SECTION IV – DEMOGRAPHIC ASSUMPTIONS - TEACHERS' RETIREMENT PLAN

AGE	NUMBER OF SERVICE RETIREMENTS 30 or More Years of Service		
	Actual	Expected	Ratio of Actual to Expected
Under 55	0	3	0.000
55	11	11	1.000
56	16	14	1.143
57	11	13	0.846
58	14	14	1.000
59	24	23	1.043
60	28	26	1.077
61	25	24	1.042
62	20	19	1.053
63	13	13	1.000
64	16	14	1.143
65	20	17	1.176
66	8	8	1.000
67	8	8	1.000
68	9	8	1.125
69	7	6	1.167
70	6	5	1.200
71	2	3	0.667
72	3	4	0.750
73	7	3	2.333
74	0	0	0.000
SUBTOTAL	248	236	1.051
75+	3	8	0.375
TOTAL	251	244	1.029



SECTION IV – DEMOGRAPHIC ASSUMPTIONS - TEACHERS' RETIREMENT PLAN

RATES OF SALARY INCREASE

COMPARISON OF ACTUAL AND EXPECTED SALARIES OF ACTIVE MEMBERS

SERVICE OF GROUP	SALARIES AT END OF YEAR (1000's)		
	MALES AND FEMALES		
	Actual	Expected	Ratio of Actual to Expected
0	181,453	182,020	0.997
1	144,091	143,520	1.004
2	102,572	104,429	0.982
3	88,722	88,805	0.999
4	75,492	75,147	1.005
5 - 9	263,125	263,622	0.998
10 - 14	239,311	240,012	0.997
15 - 19	138,841	137,383	1.011
20 - 24	152,836	150,964	1.012
25 - 29	122,351	123,527	0.990
30 +	61,082	60,679	1.007
TOTAL	1,569,876	1,570,108	1.000

The preceding results indicate that the actual rates of salary increases were very close to expected over this five-year period at almost all service group levels. Therefore, we recommend no change in the rates of salary increase at this time.



SECTION IV – DEMOGRAPHIC ASSUMPTIONS - TEACHERS' RETIREMENT PLAN

OTHER ASSUMPTIONS AND METHODS

PERCENT MARRIED: Currently, 64% of active members are assumed to be married with the male three years older than his spouse. Active members are assumed to have one child age ten. Since the data we currently have does not include spousal or family information, we will recommend no change to this assumption at this time, but will review closely during the next experience study if this data can be provided.

VALUATION COST METHOD: The Entry Age Normal (EAN) cost method is currently used to determine the annual cost of the plans. The EAN cost method is the most widely used cost method of large public sector plans and has demonstrated the highest degree of contribution stability as compared to alternative methods. Actuarial gains and losses under EAN are reflected in the unfunded actuarial accrued liability. We recommend no change at this time.

WITHDRAWAL ASSUMPTION: It is assumed that 35% of the vested members who terminate elect to withdraw their contributions while the remaining 65% elect to leave their contributions in the plan in order to be eligible for a benefit at their retirement date. After reviewing the refund logs provided over the past 6 years, we recommend changing this assumption to 15% of vested members withdrawing their contributions upon termination, and the remaining 85% leaving their contributions in the plan in order to receive a deferred benefit at their normal retirement date.

ADMINISTRATIVE EXPENSE ASSUMPTION: Starting with the 2012 actuarial valuation, it has been assumed that administrative expenses would be 1.20% of expected payroll for all active members and this assumption is weighted the same for all Plans. This is a common approach for allocating administrative expenses where there are multiple Plans with commingled assets. However, it appears actual administrative expenses as shown in the financial statements are being allocated based on asset values instead of payroll or headcount.

Over the experience period, total administrative expenses have actually been higher than expected during the experience period, with teacher administrative expenses lower than expected and police officer and firefighter administrative expenses higher than expected. **We recommend that DCRB begin to allocate administrative expenses based on payroll and increase this assumption rate to 1.60% of expected payroll for all active members for all Plans.**

However, if this reallocation of administrative expenses cannot be allocated by payroll, then we recommend we decrease the expected administrative expense for the Teachers' Plan to 1.00% of payroll.



SECTION IV – DEMOGRAPHIC ASSUMPTIONS - POLICE OFFICERS' RETIREMENT PLAN

RATES OF WITHDRAWAL

COMPARISON OF ACTUAL AND EXPECTED WITHDRAWALS FROM ACTIVE SERVICE

SERVICE	NUMBER OF WITHDRAWALS - LESS THAN 5 YEARS OF SERVICE					
	MALES			FEMALES		
	Actual	Expected	Ratio of Actual to Expected	Actual	Expected	Ratio of Actual to Expected
Under 1	14	9	1.556	3	3	1.000
1	55	59	0.932	20	15	1.333
2	30	49	0.612	9	12	0.750
3	32	19	1.684	5	3	1.667
4	29	19	1.526	7	3	2.333
TOTAL	160	155	1.032	44	36	1.222

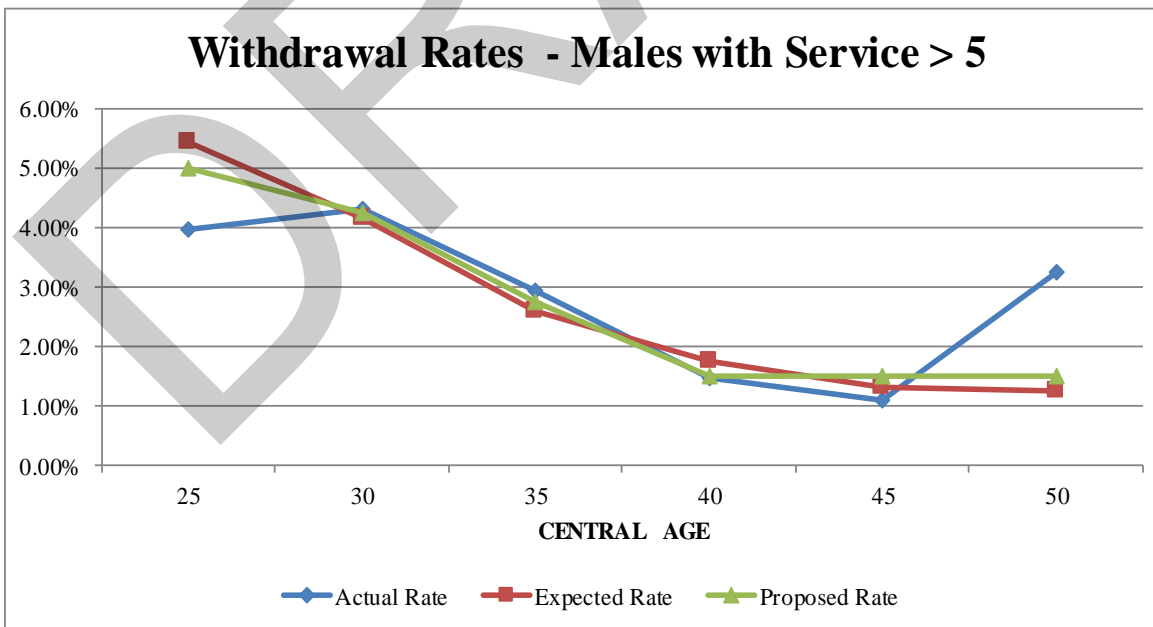
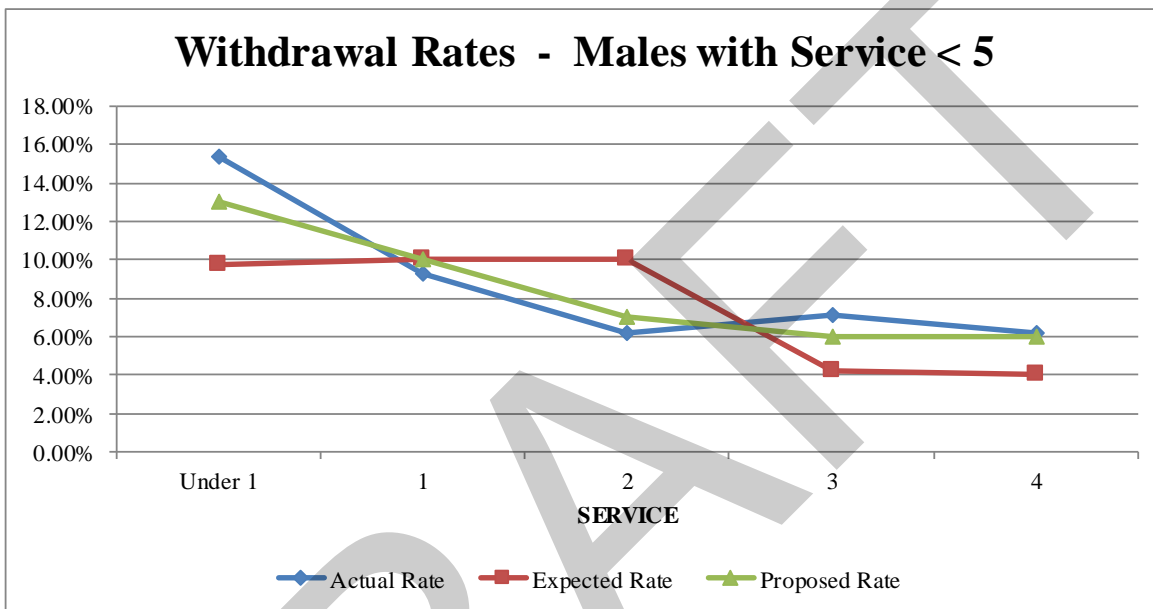
CENTRAL AGE OF GROUP	NUMBER OF WITHDRAWALS - 5 OR MORE YEARS OF SERVICE					
	MALES			FEMALES		
	Actual	Expected	Ratio of Actual to Expected	Actual	Expected	Ratio of Actual to Expected
25	6	8	0.750	2	2	1.000
30	60	58	1.034	23	13	1.769
35	52	46	1.130	17	9	1.889
40	33	39	0.846	10	11	0.909
45	39	46	0.848	13	14	0.929
50	68	26	2.615	26	8	3.250
55	17	4	4.250	4	1	4.000
60	2	0	0.000	0	0	0.000
TOTAL	277	227	1.220	95	58	1.638



SECTION IV – DEMOGRAPHIC ASSUMPTIONS - POLICE OFFICERS' RETIREMENT PLAN

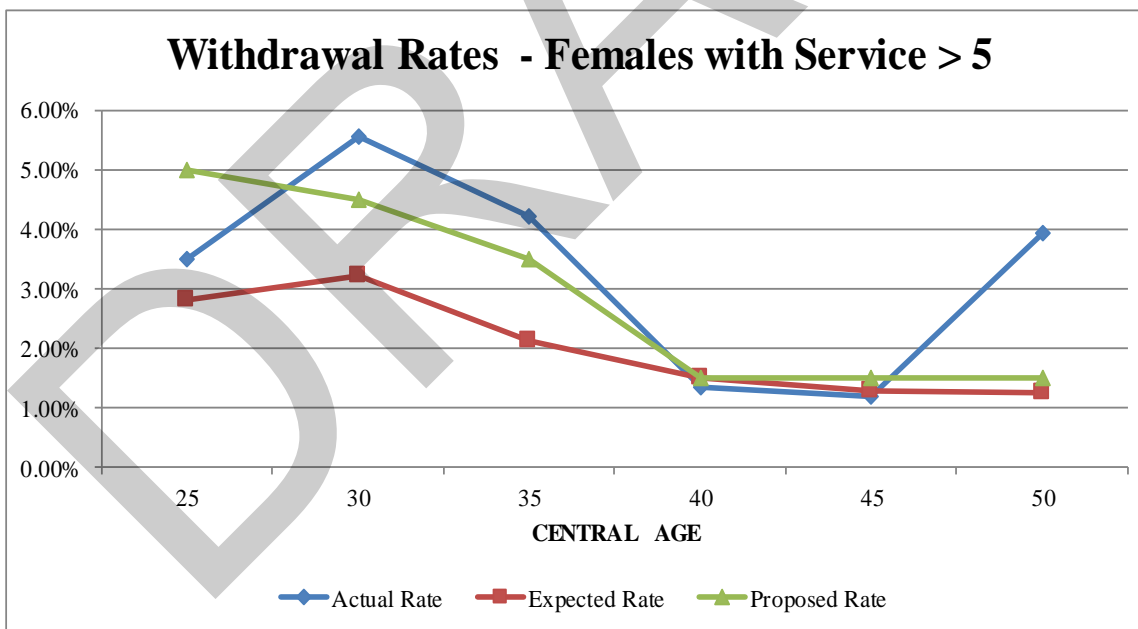
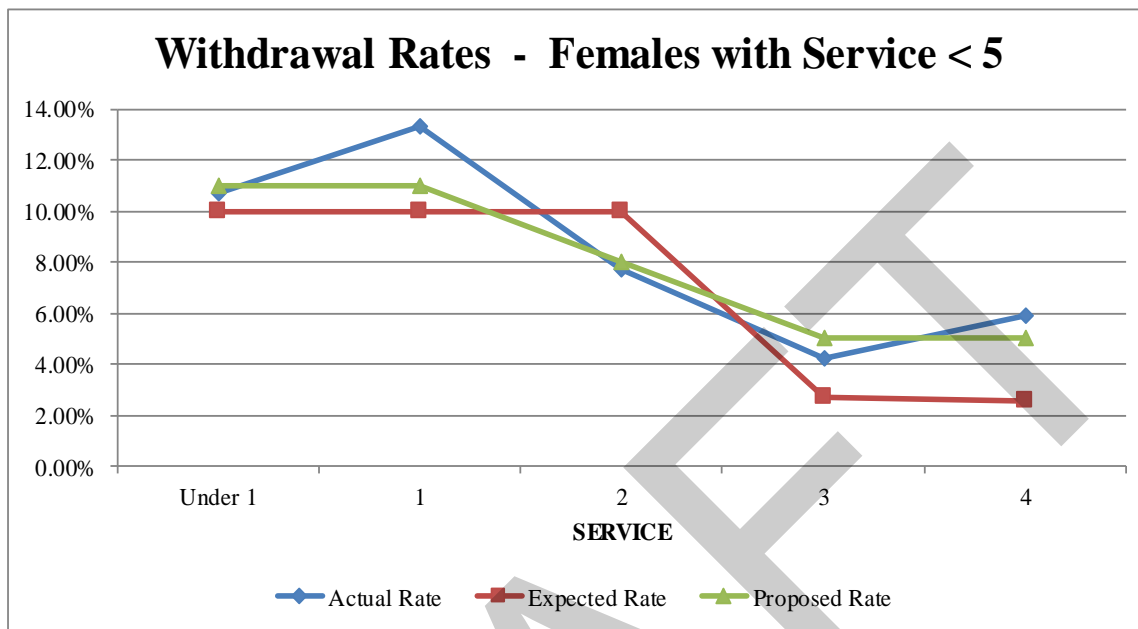
The following graphs show a comparison of the present, actual and proposed rates of withdrawal.

RATES OF WITHDRAWAL FOR ACTIVE MEMBERS





SECTION IV – DEMOGRAPHIC ASSUMPTIONS - POLICE OFFICERS' RETIREMENT PLAN



The rates of withdrawal adopted by the Board are used to determine the expected number of separations from active service which will occur as a result of resignation or dismissal. The preceding results indicate that the actual number of withdrawals is more than expected for males



SECTION IV – DEMOGRAPHIC ASSUMPTIONS - POLICE OFFICERS' RETIREMENT PLAN

and females at both service breakdowns. We recommend that the rates of withdrawal be revised to more closely reflect the experience of the system.

The following table shows a comparison between the present withdrawal rates and the proposed withdrawal rates for members.

COMPARATIVE RATES OF WITHDRAWAL

SERVICE	RATES OF WITHDRAWAL - LESS THAN 5 YEARS OF SERVICE			
	MALES		FEMALES	
	Present	Proposed	Present	Proposed
< 1	10.0%	13.0%	10.0%	11.0%
1	10.0%	10.0%	10.0%	11.0%
2	10.0%	7.0%	10.0%	8.0%
3	NA	6.0%	NA	5.0%
4	NA	6.0%	NA	5.0%

AGE	RATES OF WITHDRAWAL - MORE THAN 5 YEARS OF SERVICE			
	MALES		FEMALES	
	Present	Proposed	Present	Proposed
25	6.00%	5.00%	2.50%	5.00%
30	4.25%	4.25%	3.50%	4.50%
35	2.50%	2.75%	2.00%	3.50%
40	1.75%	1.50%	1.50%	1.50%
45	1.25%	1.50%	1.25%	1.50%
50	1.25%	1.50%	1.25%	1.50%
55	1.25%	1.50%	1.25%	1.50%



SECTION IV – DEMOGRAPHIC ASSUMPTIONS - POLICE OFFICERS' RETIREMENT PLAN

COMPARISON OF ACTUAL AND EXPECTED WITHDRAWALS FROM ACTIVE SERVICE BASED ON PROPOSED RATES

SERVICE	NUMBER OF WITHDRAWALS - LESS THAN 5 YEARS OF SERVICE					
	MALES			FEMALES		
	Actual	Expected	Ratio of Actual to Expected	Actual	Expected	Ratio of Actual to Expected
Under 1	14	12	1.167	3	3	1.000
1	55	59	0.932	20	17	1.176
2	30	34	0.882	9	9	1.000
3	32	27	1.185	5	6	0.833
4	29	28	1.036	7	6	1.167
TOTAL	160	160	1.000	44	41	1.073

CENTRAL AGE OF GROUP	NUMBER OF WITHDRAWALS - 5 OR MORE YEARS OF SERVICE					
	MALES			FEMALES		
	Actual	Expected	Ratio of Actual to Expected	Actual	Expected	Ratio of Actual to Expected
25	6	8	0.750	2	3	0.667
30	60	59	1.017	23	19	1.211
35	52	49	1.061	17	14	1.214
40	33	34	0.971	10	11	0.909
45	39	53	0.736	13	16	0.813
50	68	31	2.194	26	10	2.600
55	17	5	3.400	4	1	4.000
60	2	0	0.000	0	0	0.000
TOTAL	277	239	1.159	95	74	1.284



SECTION IV – DEMOGRAPHIC ASSUMPTIONS - POLICE OFFICERS' RETIREMENT PLAN

RATES OF DISABILITY RETIREMENT

COMPARISON OF ACTUAL AND EXPECTED DISABILITY RETIREMENTS

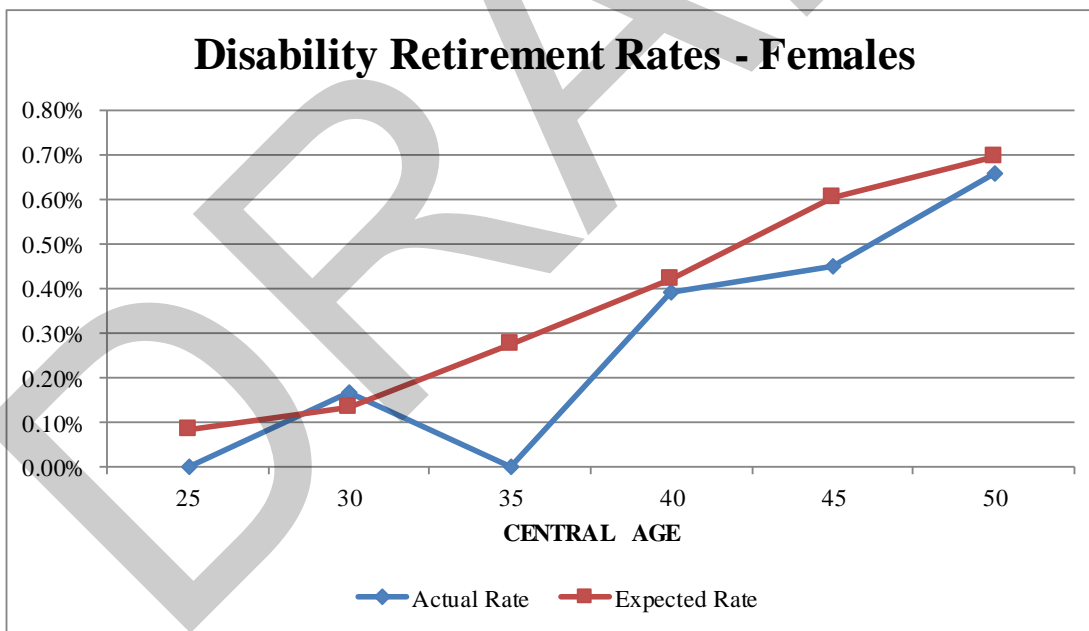
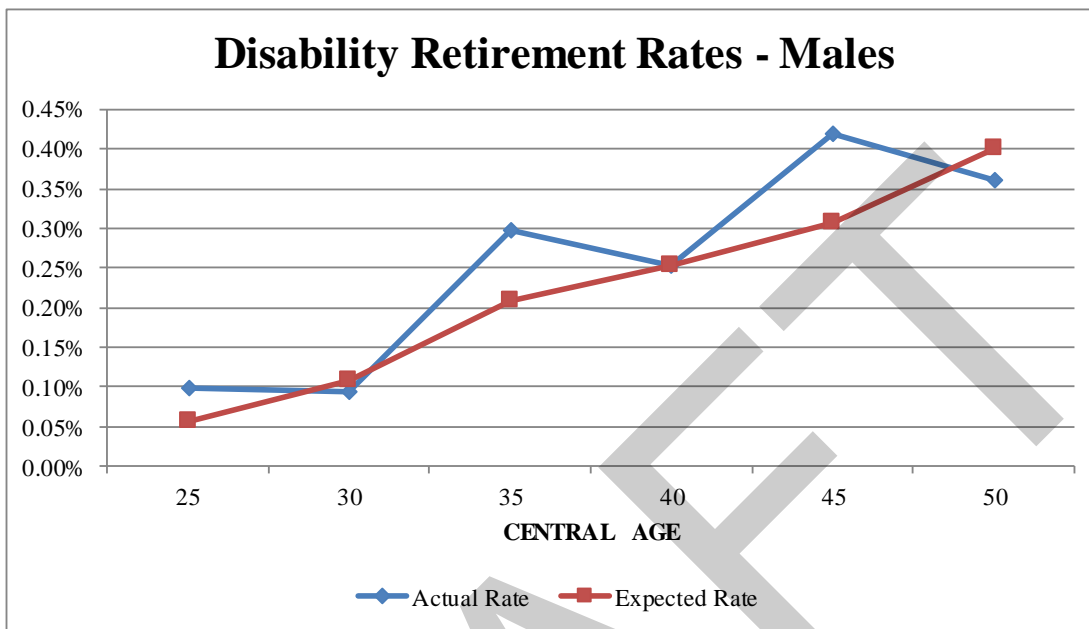
CENTRAL AGE OF GROUP	NUMBER OF DISABILITY RETIREMENTS					
	MALES			FEMALES		
	Actual	Expected	Ratio of Actual to Expected	Actual	Expected	Ratio of Actual to Expected
25	1	1	0.000	0	0	0.000
30	2	2	0.870	1	1	1.235
35	6	4	1.422	0	1	0.000
40	6	6	1.002	3	3	0.929
45	15	11	1.362	5	7	0.746
50	10	11	0.896	6	6	0.948
55+	0	5	0.000	3	2	1.493
TOTAL	40	40	0.990	18	21	0.875

CENTRAL AGE OF GROUP	NUMBER OF DISABILITY RETIREMENTS					
	MALES			FEMALES		
	Actual	Expected	Ratio of Actual to Expected	Actual	Expected	Ratio of Actual to Expected
25	1	1	0.000	0	0	0.000
30	2	2	1.000	1	1	1.000
35	6	4	1.500	0	1	0.000
40	6	6	1.000	3	3	1.000
45	15	11	1.364	5	7	0.714
50	10	11	0.909	6	6	1.000
55+	0	4	0.000	3	2	1.500
TOTAL	40	39	1.026	18	20	0.900

The following graphs show a comparison of the present and actual rates of disability retirements.



SECTION IV – DEMOGRAPHIC ASSUMPTIONS - POLICE OFFICERS' RETIREMENT PLAN



During the period under investigation, the actual rates of disability retirement matched the expected amounts for males overall and were just slightly less than expected for females. Therefore, we recommend keeping the current rates of disability.



SECTION IV – DEMOGRAPHIC ASSUMPTIONS - POLICE OFFICERS' RETIREMENT PLAN

RATES OF SERVICE RETIREMENT

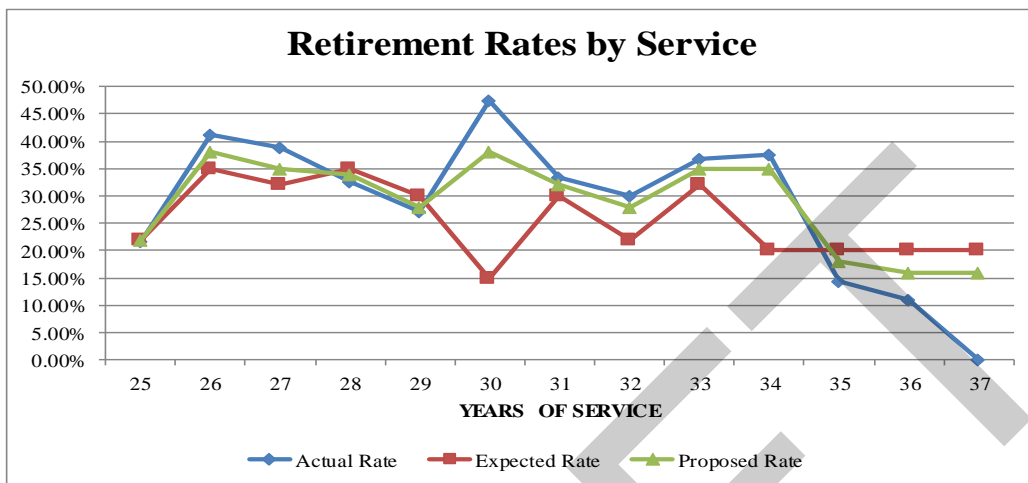
COMPARISON OF ACTUAL AND EXPECTED RETIREMENTS

SERVICE	NUMBER OF SERVICE RETIREMENTS		
	Actual	Expected	Ratio of Actual to Expected
Under 25	5	3	1.667
25	100	101	0.990
26	123	105	1.171
27	76	63	1.206
28	53	57	0.930
29	43	48	0.896
30	53	17	3.118
31	17	15	1.133
32	9	7	1.286
33	7	6	1.167
34	3	2	1.500
35	1	1	1.000
36	1	2	0.500
37	0	1	0.000
38	0	1	0.000
39	1	1	1.000
SUBTOTAL	492	430	1.144
40 and Over	16	48	0.333
TOTAL	508	478	1.063

The following graphs show a comparison of the present and actual rates of service retirements.



SECTION IV – DEMOGRAPHIC ASSUMPTIONS - POLICE OFFICERS' RETIREMENT PLAN



The preceding results indicate that overall, the actual number of retirements was slightly more than expected. Therefore, we recommend revising the rates of retirement to match the experience more closely.

The following table shows a comparison between the present and the proposed retirement rates.



SECTION IV – DEMOGRAPHIC ASSUMPTIONS - POLICE OFFICERS' RETIREMENT PLAN

COMPARATIVE RATES OF SERVICE RETIREMENT

RATES OF SERVICE RETIREMENT		
SERVICE	Present*	Proposed*
Under 25	12.5%	15.0%
25	22.0%	22.0%
26	35.0%	38.0%
27	32.0%	35.0%
28	35.0%	34.0%
29	30.0%	28.0%
30	15.0%	38.0%
31	30.0%	32.0%
32	22.0%	28.0%
33	32.0%	35.0%
34	20.0%	35.0%
35	20.0%	18.0%
36	20.0%	16.0%
37	20.0%	16.0%
38	20.0%	16.0%
39	20.0%	16.0%
40 and Over	20.0%	16.0%

* 100% assumed rate at age 65.



SECTION IV – DEMOGRAPHIC ASSUMPTIONS - POLICE OFFICERS' RETIREMENT PLAN

COMPARISON OF ACTUAL AND EXPECTED SERVICE RETIREMENTS BASED ON PROPOSED RATES

SERVICE	NUMBER OF SERVICE RETIREMENTS		
	Actual	Expected	Ratio of Actual to Expected
Under 25	5	5	1.000
25	100	101	0.990
26	123	114	1.079
27	76	69	1.101
28	53	55	0.964
29	43	45	0.956
30	53	43	1.233
31	17	16	1.063
32	9	8	1.125
33	7	7	1.000
34	3	3	1.000
35	1	1	1.000
36	1	1	1.000
37	0	1	0.000
38	0	1	0.000
39	1	1	1.000
SUBTOTAL	492	471	1.045
40 and Over	16	46	0.348
TOTAL	508	517	0.983



SECTION IV – DEMOGRAPHIC ASSUMPTIONS - POLICE OFFICERS' RETIREMENT PLAN

RATES OF SALARY INCREASE

COMPARISON OF ACTUAL AND EXPECTED SALARIES OF ACTIVE MEMBERS

SERVICE OF GROUP	SALARIES AT END OF YEAR (1000's)		
	MALES AND FEMALES		
	Actual	Expected	Ratio of Actual to Expected
0	41,937	42,121	0.996
1	33,336	33,166	1.005
2	32,126	33,230	0.967
3	33,048	35,451	0.932
4	41,335	42,688	0.968
5 - 9	243,204	252,055	0.965
10 - 14	220,009	227,779	0.966
15 - 19	149,156	154,839	0.963
20 - 24	467,797	495,944	0.943
25 - 29	95,795	103,390	0.927
30 +	14,216	15,018	0.947
TOTAL	1,371,959	1,435,681	0.956

The preceding results indicate that salary increases were less than expected over this five-year period as was the case over the previous four-year study period. These results indicate a need to reduce the rate of assumed salary increases. This will automatically take place due to the proposed reduction in the price inflation assumption. In addition to the change in the price inflation assumption, we have also refined the merit scale portion of the assumption to match the step, retention, and longevity increases included in the most recent collective bargaining agreement.



SECTION IV – DEMOGRAPHIC ASSUMPTIONS - POLICE OFFICERS' RETIREMENT PLAN

SERVICE OF GROUP	SALARY INCREASE RATES	
	Present	Proposed
< 1	9.46%	9.46%
1	9.46%	8.94%
2	9.46%	7.38%
3	9.46%	6.86%
4	7.96%	6.34%
5	7.96%	5.83%
6	7.96%	5.83%
7-18	7.12%	5.83%
19	6.86%	12.47%
20	14.15%	5.57%
21	6.86%	5.31%
22	6.86%	5.05%
23	6.86%	4.79%
24	6.86%	7.07%
25	16.34%	4.53%
26 +	5.29%	4.27%

The following table shows a comparison of actual salary increases to the proposed increases over the 5 year study period.

SERVICE OF GROUP	SALARIES AT END OF YEAR (1000's)		
	MALES AND FEMALES		
	Actual	Expected	Ratio of Actual to Expected
0	41,937	42,119	0.996
1	33,336	33,007	1.010
2	32,126	32,598	0.986
3	33,048	34,609	0.955
4	41,335	42,048	0.983
5 - 9	243,204	248,284	0.980
10 - 14	220,009	226,172	0.973
15 - 19	149,156	154,796	0.964
20 - 24	467,797	484,049	0.966
25 - 29	95,795	98,282	0.975
30 +	14,216	14,465	0.983
TOTAL	1,371,959	1,410,430	0.973



SECTION IV – DEMOGRAPHIC ASSUMPTIONS - POLICE OFFICERS' RETIREMENT PLAN

OTHER ASSUMPTIONS AND METHODS

PERCENT MARRIED: Currently 80% of active members are assumed to be married with the male three years older than his spouse. Active members are assumed to have one child age ten. Since the data we currently have does not include spousal or family information, we will recommend no change to this assumption at this time, but will review closely during the next experience study if this data can be provided.

VALUATION COST METHOD: The Entry Age Normal (EAN) cost method is currently used to determine the annual cost of the plans. The EAN cost method is the most widely used cost method of large public sector plans and has demonstrated the highest degree of contribution stability as compared to alternative methods. Actuarial gains and losses under EAN are reflected in the unfunded actuarial accrued liability. We recommend no change at this time.

WITHDRAWAL ASSUMPTION: It is assumed that 80% of the vested members who terminate elect to withdraw their contributions while the remaining 20% elect to leave their contributions in the plan in order to be eligible for a benefit at their retirement date. After reviewing the refund logs provided over the past 6 years, we recommend changing this assumption to 25% of vested members withdrawing their contributions upon termination, and the remaining 75% leaving their contributions in the plan in order to receive a deferred benefit at their normal retirement date.

ADMINISTRATIVE EXPENSE ASSUMPTION: Starting with the 2012 actuarial valuation, it has been assumed that administrative expenses would be 1.20% of expected payroll for all active members and this assumption is weighted the same for all Plans. This is a common approach for allocating administrative expenses where there are multiple Plans with commingled assets. However, it appears actual administrative expenses as shown in the financial statements are being allocated based on asset values instead of payroll or headcount.

Over the experience period, total administrative expenses have actually been higher than expected during the experience period, with teacher administrative expenses lower than expected and police officer and firefighter administrative expenses higher than expected. **We recommend that DCRB begin to allocate administrative expenses based on payroll and increase this assumption rate to 1.60% of expected payroll for all active members for all Plans.**

However, if this reallocation of administrative expenses cannot be allocated by payroll, then we recommend we increase the expected administrative expense for the Police Officers' Plan to 2.10% of payroll.

PRE-RETIREMENT DEATH BENEFITS: To value the pre-retirement death benefit, the benefit form for all retirements (normal or disabled) is assumed to be a 67.8% Joint and Survivor annuity for all participants (based on 40% of average pay survivor benefits). One-fourth of all active deaths are assumed to occur in the line of duty. We recommend maintaining this assumption.



SECTION IV – DEMOGRAPHIC ASSUMPTIONS - POLICE OFFICERS' RETIREMENT PLAN

PERCENT OF DISABILITY: Three-fourths of all disabilities are assumed to occur in the line of duty. For all disability retirements occurring in the line of duty, the percent of disability is assumed to be 100%. We recommend no change to these assumptions.

DRAFT



SECTION IV – DEMOGRAPHIC ASSUMPTIONS - FIREFIGHTERS' RETIREMENT PLAN

RATES OF WITHDRAWAL

COMPARISON OF ACTUAL AND EXPECTED WITHDRAWALS FROM ACTIVE SERVICE

SERVICE	NUMBER OF WITHDRAWALS LESS THAN 5 YEARS OF SERVICE		
	Actual	Expected	Ratio of Actual to Expected
Under 1	0	0	0.000
1	13	15	0.845
2	14	6	2.219
3	21	7	3.061
4	21	10	2.057
TOTAL	69	39	1.780

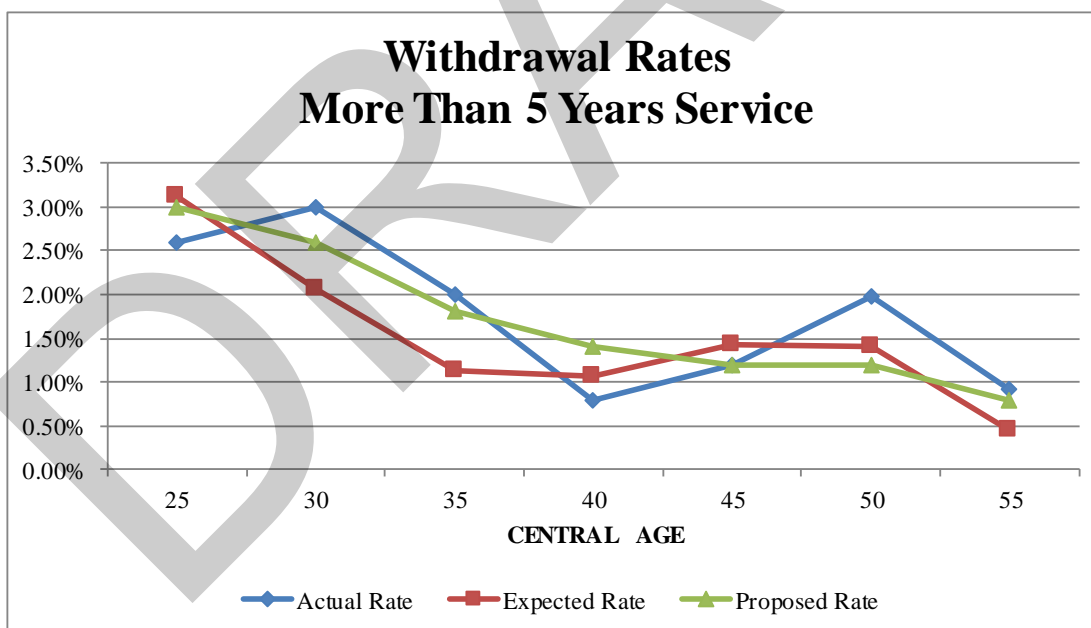
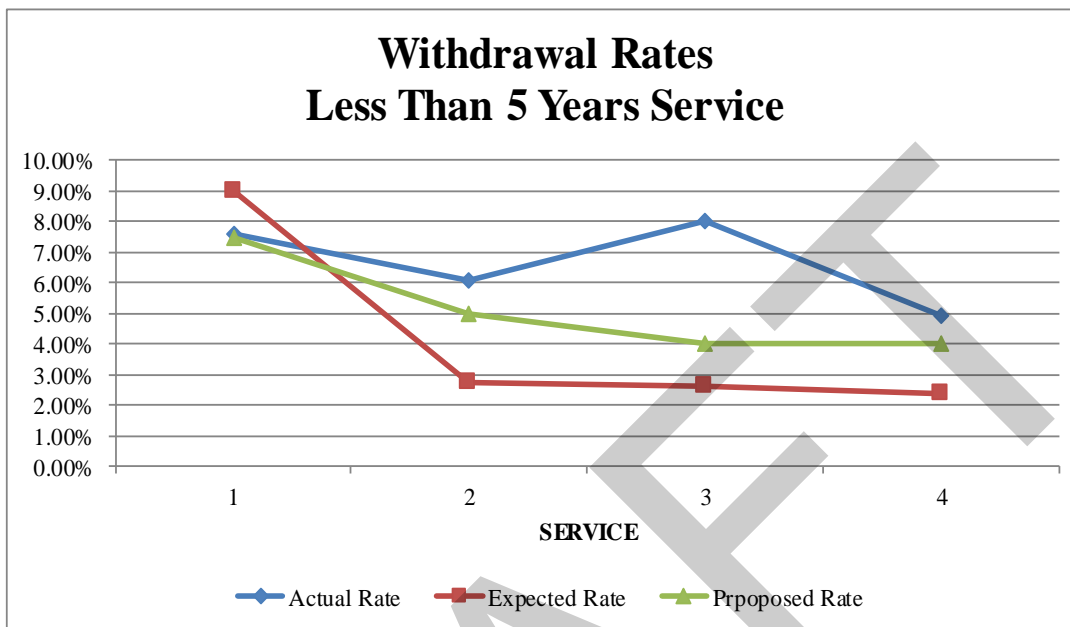
CENTRAL AGE OF GROUP	NUMBER OF WITHDRAWALS 5 OR MORE YEARS OF SERVICE		
	Actual	Expected	Ratio of Actual to Expected
25	11	13	0.828
30	35	24	1.455
35	24	13	1.783
40	11	15	0.744
45	17	21	0.829
50	16	11	1.411
55	1	0	2.083
60	0	0	0.000
TOTAL	115	98	1.175

The following graph shows a comparison of the present, actual and proposed rates of withdrawal.

RATES OF WITHDRAWAL FOR ACTIVE MEMBERS



SECTION IV – DEMOGRAPHIC ASSUMPTIONS - FIREFIGHTERS' RETIREMENT PLAN



The rates of withdrawal adopted by the Board are used to determine the expected number of separations from active service which will occur as a result of resignation or dismissal. The preceding results indicate that the actual number of withdrawals for members with less than 5 years of service is significantly more than expected. For members with 5 more years of service, the



SECTION IV – DEMOGRAPHIC ASSUMPTIONS - FIREFIGHTERS' RETIREMENT PLAN

actual number of withdrawals is somewhat more than expected. Therefore, we recommend that the rates of withdrawal be revised to more closely reflect the experience of the system.

The following table shows a comparison between the present withdrawal rates and the proposed withdrawal rates for members with five or more years of service.

COMPARATIVE RATES OF WITHDRAWAL

SERVICE	RATES OF WITHDRAWAL	
	Less than 5 years of service	
	Present	Proposed
< 1	9.00%	7.50%
1	9.00%	7.50%
2	NA	5.00%
3	NA	4.00%
4	NA	4.00%

AGE	RATES OF WITHDRAWAL	
	5 or more years of service	
	Present	Proposed
25	3.50%	3.00%
30	2.00%	2.60%
35	1.00%	1.80%
40	1.00%	1.40%
45	1.50%	1.20%
50	1.50%	1.20%
55	0.00%	0.80%



SECTION IV – DEMOGRAPHIC ASSUMPTIONS - FIREFIGHTERS' RETIREMENT PLAN

COMPARISON OF ACTUAL AND EXPECTED WITHDRAWALS FROM ACTIVE SERVICE BASED ON PROPOSED RATES

SERVICE	NUMBER OF WITHDRAWALS LESS THAN 5 YEARS OF SERVICE		
	Actual	Expected	Ratio of Actual to Expected
Under 1	0	0	0.000
1	13	13	1.014
2	14	12	1.217
3	21	10	2.004
4	21	17	1.232
TOTAL	69	52	1.331

CENTRAL AGE OF GROUP	NUMBER OF WITHDRAWALS 5 OR MORE YEARS OF SERVICE		
	Actual	Expected	Ratio of Actual to Expected
25	11	13	0.863
30	35	30	1.155
35	24	22	1.110
40	11	19	0.569
45	17	17	0.989
50	16	10	1.656
55	1	1	1.147
60	0	0	0.000
TOTAL	115	112	1.029



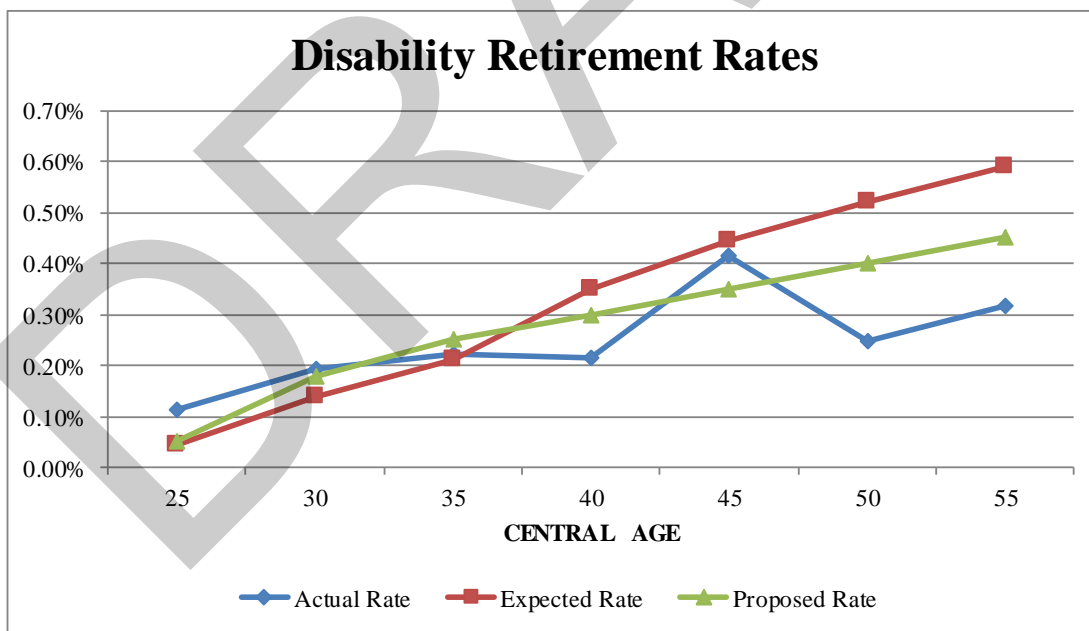
SECTION IV – DEMOGRAPHIC ASSUMPTIONS - FIREFIGHTERS' RETIREMENT PLAN

RATES OF DISABILITY RETIREMENT

COMPARISON OF ACTUAL AND EXPECTED DISABILITY RETIREMENTS

CENTRAL AGE OF GROUP	NUMBER OF DISABILITY RETIREMENTS		
	Actual	Expected	Ratio of Actual to Expected
30	4	3	1.556
35	3	3	1.060
40	3	5	0.619
45	6	6	0.939
50	3	6	0.480
55	2	4	0.535
60	1	0	3.571
TOTAL	22	27	0.818

The following graphs show a comparison of the present, actual, and proposed rates of disability retirements.



During the period under investigation, the actual rates of disability retirement were less than expected. Therefore, we recommend the rates of disability retirement be revised to more closely reflect the experience of the System.



SECTION IV – DEMOGRAPHIC ASSUMPTIONS - FIREFIGHTERS' RETIREMENT PLAN

The following table shows a comparison between the present disability retirement rates and the proposed rates.

COMPARATIVE RATES OF DISABILITY RETIREMENT

AGE	RATES OF DISABILITY RETIREMENT	
	Present	Proposed
25	0.02%	0.05%
30	0.15%	0.18%
35	0.20%	0.25%
40	0.35%	0.30%
45	0.45%	0.35%
50	0.52%	0.40%
55	0.60%	0.45%
60	0.70%	0.50%

COMPARISON OF ACTUAL AND EXPECTED DISABILITY RETIREMENTS BASED ON PROPOSED RATES

CENTRAL AGE OF GROUP	NUMBER OF DISABILITY RETIREMENTS		
	Actual	Expected	Ratio of Actual to Expected
30	4	3	1.228
35	3	3	0.894
40	3	4	0.719
45	6	5	1.190
50	3	5	0.624
55	2	3	0.703
60	1	0	2.941
TOTAL	22	24	0.924



SECTION IV – DEMOGRAPHIC ASSUMPTIONS - FIREFIGHTERS' RETIREMENT PLAN

RATES OF SERVICE RETIREMENT

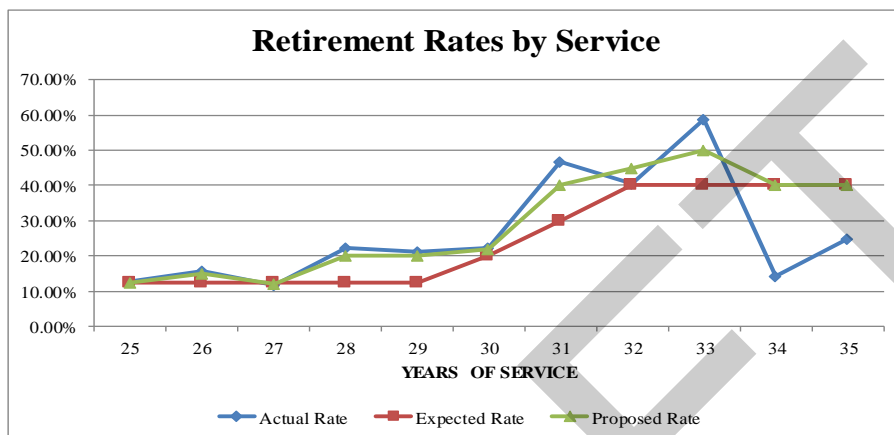
COMPARISON OF ACTUAL AND EXPECTED RETIREMENTS

YEARS OF SERVICE	NUMBER OF SERVICE RETIREMENTS		
	Actual	Expected	Ratio of Actual to Expected
Under 25	3	11	0.282
25	16	16	1.032
26	25	20	1.249
27	15	16	0.951
28	35	20	1.717
29	33	20	1.638
30	22	20	1.078
31	30	21	1.408
32	15	17	0.904
33	10	8	1.250
34	1	4	0.250
35	1	2	0.455
36	1	2	0.625
37	4	3	1.538
38	1	2	0.455
39	2	2	1.111
40 & Over	1	1	1.000
TOTAL	215	184	1.167



SECTION IV – DEMOGRAPHIC ASSUMPTIONS - FIREFIGHTERS' RETIREMENT PLAN

The following graphs show a comparison of the present and actual rates of service retirements.



RATES OF RETIREMENT FOR ACTIVE MEMBERS

The preceding results indicate that the actual number of retirements during this period of investigation is slightly more than expected. Therefore, we recommend adjusting the rates of retirement to more closely match the experience of the Plan. The following table shows a comparison between the present retirement rates and the proposed rates.

COMPARATIVE RATES OF SERVICE RETIREMENT

Years of Service	RATES OF SERVICE RETIREMENT*	
	Present	Proposed
25	12.5%	12.5%
26	12.5%	15.0%
27	12.5%	12.0%
28	12.5%	20.0%
29	12.5%	20.0%
30	20.0%	22.0%
31	30.0%	40.0%
32	40.0%	45.0%
33	40.0%	50.0%
34	40.0%	40.0%
35	40.0%	40.0%

*100% assumed rate at age 60



SECTION IV – DEMOGRAPHIC ASSUMPTIONS - FIREFIGHTERS' RETIREMENT PLAN

COMPARISON OF ACTUAL AND EXPECTED SERVICE RETIREMENTS BASED ON PROPOSED RATES

YEARS OF SERVICE	NUMBER OF SERVICE RETIREMENTS		
	Actual	Expected	Ratio of Actual to Expected
Under 25	3	2	1.600
25	16	16	1.032
26	25	24	1.042
27	15	15	0.992
28	35	31	1.122
29	33	31	1.071
30	22	22	1.020
31	30	26	1.172
32	15	17	0.901
33	10	9	1.176
34	1	3	0.357
35	1	2	0.625
36	1	2	0.625
37	4	2	2.000
38	1	2	0.625
39	2	1	1.667
40 & Over	1	0	2.500
TOTAL	215	202	1.064



SECTION IV – DEMOGRAPHIC ASSUMPTIONS - FIREFIGHTERS' RETIREMENT PLAN

RATES OF SALARY INCREASE

COMPARISON OF ACTUAL AND EXPECTED SALARIES OF ACTIVE MEMBERS

SERVICE OF GROUP	SALARIES AT END OF YEAR (1000's)		
	MALES AND FEMALES		
	Actual	Expected	Ratio of Actual to Expected
0	7,783	7,803	0.997
1	10,924	10,990	0.994
2	12,777	12,732	1.004
3	22,067	21,963	1.005
4	23,909	24,707	0.968
5 - 9	145,292	146,342	0.993
10 - 14	95,594	96,701	0.989
15 - 19	74,580	77,175	0.966
20 - 24	121,082	125,097	0.968
25 - 29	76,879	81,785	0.940
30 +	8,321	8,787	0.947
TOTAL	599,208	614,082	0.976

The preceding results indicate that salary increases were less than expected over this five-year period, especially with service levels 15 years and over. This was also the case in the prior experience study. Therefore, we recommend modest decreases for the 15 years of service and over group in the rates of salary increase at this time. Most of the decrease is due to the decrease in the inflation assumption. The merit/seniority portion of the scale is based on the collective bargaining agreement pay scales.

SERVICE OF GROUP	SALARY INCREASE RATES	
	Present	Proposed
0	2.50%	3.00%
1	2.50%	3.00%
2	2.50%	3.00%
3	2.50%	3.00%
4	2.50%	3.00%
5 - 9	2.50%	3.00%
10 - 14	2.50%	3.00%
15 +	2.50%	1.25%



SECTION IV – DEMOGRAPHIC ASSUMPTIONS - FIREFIGHTERS' RETIREMENT PLAN

A comparison of actual pay increases to the proposed salary scale are seen in the following table.

SERVICE OF GROUP	SALARIES AT END OF YEAR (1000's)		
	MALES AND FEMALES		
	Actual	Expected	Ratio of Actual to Expected
0	7,783	7,822	0.995
1	10,924	11,017	0.992
2	12,777	12,764	1.001
3	22,067	22,017	1.002
4	23,909	24,768	0.965
5 - 9	145,292	146,704	0.990
10 - 14	95,594	96,940	0.986
15 - 19	74,580	76,085	0.980
20 - 24	121,082	122,642	0.987
25 - 29	76,879	79,079	0.972
30 +	8,321	9,087	0.916
TOTAL	599,208	608,925	0.984



SECTION IV – DEMOGRAPHIC ASSUMPTIONS - FIREFIGHTERS' RETIREMENT PLAN

OTHER ASSUMPTIONS AND METHODS

PERCENT MARRIED: Currently 80% of active members are assumed to be married with the male three years older than his spouse. Active members are assumed to have one child age ten. Since the data we currently have does not include spousal or family information, we will recommend no change to this assumption at this time, but will review closely during the next experience study if this data can be provided.

VALUATION COST METHOD: The Entry Age Normal (EAN) cost method is currently used to determine the annual cost of the plans. The EAN cost method is the most widely used cost method of large public sector plans and has demonstrated the highest degree of contribution stability as compared to alternative methods. Actuarial gains and losses under EAN are reflected in the unfunded actuarial accrued liability. We recommend no change at this time.

WITHDRAWAL ASSUMPTION: It is assumed that 80% of the vested members who terminate elect to withdraw their contributions while the remaining 20% elect to leave their contributions in the plan in order to be eligible for a benefit at their retirement date. After reviewing the refund logs provided over the past 6 years, we recommend changing this assumption to 15% of vested members withdrawing their contributions upon termination, and the remaining 85% leaving their contributions in the plan in order to receive a deferred benefit at their normal retirement date.

ADMINISTRATIVE EXPENSE ASSUMPTION: Starting with the 2012 actuarial valuation, it has been assumed that administrative expenses would be 1.20% of expected payroll for all active members and this assumption is weighted the same for all Plans. This is a common approach for allocating administrative expenses where there are multiple Plans with commingled assets. However, it appears actual administrative expenses as shown in the financial statements are being allocated based on asset values instead of payroll or headcount.

Over the experience period, total administrative expenses have actually been higher than expected during the experience period, with teacher administrative expenses lower than expected and police officer and firefighter administrative expenses higher than expected. **We recommend that DCRB begin to allocate administrative expenses based on payroll and increase this assumption rate to 1.60% of expected payroll for all active members for all Plans.**

However, if this reallocation of administrative expenses cannot be allocated by payroll, then we recommend we increase the expected administrative expense for the Firefighters' Plan to 2.10% of payroll.

PRE-RETIREMENT DEATH BENEFITS: To value the pre-retirement death benefit, the benefit form for all retirements (normal or disabled) is assumed to be a 67.8% Joint and Survivor annuity for all participants (based on 40% of average pay survivor benefits). One-fourth of all active deaths are assumed to occur in the line of duty. We recommend maintaining this assumption.



SECTION IV – DEMOGRAPHIC ASSUMPTIONS - FIREFIGHTERS' RETIREMENT PLAN

PERCENT OF DISABILITY: Three-fourths of all disabilities are assumed to occur in the line of duty. For all disability retirements occurring in the line of duty, the percent of disability is assumed to be 100%. We recommend no change to these assumptions.

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APPENDIX A

Historical September CPI (U) Index

Year	CPI (U)	Year	CPI (U)
1965	31.6	1991	137.2
1966	32.7	1992	141.3
1967	33.6	1993	145.1
1968	35.1	1994	149.4
1969	37.1	1995	153.2
1970	39.2	1996	157.8
1971	40.8	1997	161.2
1972	42.1	1998	163.6
1973	45.2	1999	167.9
1974	50.6	2000	173.7
1975	54.6	2001	178.3
1976	57.6	2002	181.0
1977	61.4	2003	185.2
1978	66.5	2004	189.9
1979	74.6	2005	198.8
1980	84.0	2006	202.9
1981	93.2	2007	208.5
1982	97.9	2008	218.8
1983	100.7	2009	216.0
1984	105.0	2010	218.4
1985	108.3	2011	226.9
1986	110.2	2012	231.4
1987	115.0	2013	234.1
1988	119.8	2014	238.0
1989	125.0	2015	237.9
1990	132.7		



APPENDIX B

Capital Market Assumptions and Asset Allocation

Real Rates of Return and Standard Deviations by Asset Class

Asset Class	Expected Real Rate of Return	Standard Deviation
Domestic Equity	5.3%	18.0%
International Developed Equity	5.9%	20.0%
International Emerging Equity	8.6%	26.5%
Investment Grade Bonds	0.7%	4.5%
High Yield Bonds	3.5%	12.5%
TIPS	0.4%	7.5%
Emerging Market Debt	3.5%	14.0%
Foreign Developed Market Debt	(0.3)%	9.0%
Bank Loans	2.3%	10.0%
Absolute Return Assets	3.1%	10.5%
Private Equity	7.0%	24.0%
Real Estate	3.9%	29.0%
Infrastructure	3.6%	16.0%
Private Energy Assets	6.0%	22.0%

Asset Allocation Targets

Asset Class	Asset Allocation
Domestic Equity	20%
International Developed Equity	16%
International Emerging Equity	10%
Investment Grade Bonds	11%
High Yield Bonds	4%
TIPS	6%
Emerging Market Debt	4%
Foreign Developed Market Debt	2%
Bank Loans	3%
Absolute Return Assets	4%
Private Equity	9%
Real Estate	6%
Infrastructure	3%
Private Energy Assets	2%



APPENDIX B

Asset Correlation Matrix

ASSET CLASS	Domestic Equity	International Dev. Eq.	Emerging Markets Eq.	Invest Grade Bonds	High Yield Bonds	TIPS	Emerging Markets Debt	Foreign Dev. Debt	Bank Loans	Absolute Return	Private Equity	Real Estate	Infrastructure	Private Energy
Domestic Equity	1.00													
International Dev. Eq.	0.90	1.00												
Emerging Markets Eq.	0.80	0.90	1.00											
Invest Grade Bonds	0.05	0.05	0.05	1.00										
High Yield Bonds	0.70	0.70	0.70	0.20	1.00									
TIPS	0.15	0.15	0.15	0.80	0.30	1.00								
Emerging Markets Debt	0.65	0.75	0.80	0.35	0.65	0.40	1.00							
Foreign Dev. Debt	0.25	0.45	0.35	0.60	0.25	0.60	0.60	1.00						
Bank Loans	0.60	0.60	0.55	0.00	0.80	0.20	0.40	0.05	1.00					
Absolute Return	0.80	0.85	0.85	0.05	0.70	0.20	0.65	0.30	0.65	1.00				
Private Equity	0.85	0.80	0.75	0.05	0.65	0.05	0.55	0.20	0.65	0.50	1.00			
Real Estate	0.50	0.45	0.40	0.20	0.50	0.10	0.30	0.35	0.45	0.40	0.45	1.00		
Infrastructure	0.55	0.55	0.50	0.30	0.60	0.30	0.60	0.45	0.50	0.60	0.45	0.60	1.00	
Private Energy	0.65	0.00	0.60	0.10	0.45	0.10	0.60	0.30	0.40	0.00	0.55	0.45	0.55	1.00



APPENDIX C

Social Security Administration Wage Index

Year	Wage Index	Annual Increase	Year	Wage Index	Annual Increase
1963	4,396.64	2.45%	1989	20,099.55	3.96%
1964	4,576.32	4.09	1990	21,027.98	4.62
1965	4,658.72	1.80	1991	21,811.60	3.73
1966	4,938.36	6.00	1992	22,935.42	5.15
1967	5,213.44	5.57	1993	23,132.67	0.86
1968	5,571.76	6.87	1994	23,753.53	2.68
1969	5,893.76	5.78	1995	24,705.66	4.01
1970	6,186.24	4.96	1996	25,913.90	4.89
1971	6,497.08	5.02	1997	27,426.00	5.84
1972	7,133.80	9.80	1998	28,861.44	5.23
1973	7,580.16	6.26	1999	30,469.84	5.57
1974	8,030.76	5.94	2000	32,154.82	5.53
1975	8,630.92	7.47	2001	32,921.92	2.39
1976	9,226.48	6.90	2002	33,252.09	1.00
1977	9,779.44	5.99	2003	34,064.95	2.44
1978	10,556.03	7.94	2004	35,648.55	4.65
1979	11,479.46	8.75	2005	36,952.94	3.66
1980	12,513.46	9.01	2006	38,651.41	4.60
1981	13,773.10	10.07	2007	40,405.48	4.54
1982	14,531.34	5.51	2008	41,334.97	2.30
1983	15,239.24	4.87	2009	40,711.61	(1.50)
1984	16,135.07	5.88	2010	41,673.83	2.36
1985	16,822.51	4.26	2011	42,979.61	3.13
1986	17,321.82	2.97	2012	44,321.67	3.12
1987	18,426.51	6.38	2013	44,888.16	1.28
1988	19,334.04	4.93	2014	46,481.52	3.55



APPENDIX D

TABLE 1
TEACHERS' RETIREMENT PLAN
RATES OF SEPARATION FROM ACTIVE SERVICE

Age	Rates of Withdrawal		Rates of Disability	Rates of Death		Rates of Retirement
	Males	Females		Males	Females	
19	18.00%	18.00%	0.010%	0.0559%	0.0222%	
20	18.00%	18.00%	0.010%	0.0615%	0.0214%	
21	18.00%	18.00%	0.010%	0.0671%	0.0218%	
22	18.00%	18.00%	0.010%	0.0730%	0.0222%	
23	18.00%	18.00%	0.010%	0.0760%	0.0226%	
24	18.00%	18.00%	0.010%	0.0770%	0.0231%	
25	18.00%	18.00%	0.010%	0.0752%	0.0236%	
26	17.60%	17.60%	0.012%	0.0733%	0.0244%	
27	17.20%	17.20%	0.014%	0.0720%	0.0255%	
28	16.80%	16.80%	0.016%	0.0712%	0.0268%	
29	16.40%	16.40%	0.018%	0.0709%	0.0283%	
30	16.00%	16.00%	0.020%	0.0711%	0.0299%	
31	15.20%	14.80%	0.022%	0.0717%	0.0317%	
32	14.40%	13.60%	0.024%	0.0726%	0.0336%	
33	13.60%	12.40%	0.026%	0.0739%	0.0356%	
34	12.80%	11.20%	0.028%	0.0756%	0.0376%	
35	12.00%	10.00%	0.030%	0.0775%	0.0397%	
36	12.00%	9.60%	0.038%	0.0797%	0.0417%	
37	12.00%	9.20%	0.046%	0.0820%	0.0441%	
38	12.00%	8.80%	0.054%	0.0846%	0.0470%	
39	12.00%	8.40%	0.062%	0.0875%	0.0505%	
40	12.00%	8.00%	0.070%	0.0912%	0.0547%	5.00%
41	11.20%	7.70%	0.080%	0.0958%	0.0598%	5.00%
42	10.40%	7.40%	0.090%	0.1019%	0.0658%	5.00%
43	9.60%	7.10%	0.100%	0.1096%	0.0730%	5.00%
44	8.80%	6.80%	0.110%	0.1194%	0.0812%	5.00%
45	8.00%	6.50%	0.120%	0.1313%	0.0907%	5.00%
46	8.00%	6.50%	0.136%	0.1455%	0.1013%	5.00%
47	8.00%	6.50%	0.152%	0.1619%	0.1130%	5.00%
48	8.00%	6.50%	0.168%	0.1806%	0.1258%	5.00%
49	8.00%	6.50%	0.184%	0.2015%	0.1394%	5.00%
50	8.00%	6.50%	0.200%	0.2243%	0.1537%	5.00%
51	8.00%	6.50%	0.210%	0.2490%	0.1685%	5.00%
52	8.00%	6.50%	0.220%	0.2757%	0.1839%	5.00%
53	8.00%	6.50%	0.230%	0.3045%	0.1997%	5.00%
54	8.00%	6.50%	0.240%	0.3357%	0.2162%	5.00%
55	8.00%	6.50%	0.250%	0.3697%	0.2332%	22.00%
56	8.00%	6.50%	0.260%	0.4071%	0.2510%	22.00%
57	8.00%	6.50%	0.270%	0.4485%	0.2697%	20.00%
58	8.00%	6.50%	0.280%	0.4950%	0.2896%	20.00%
59	8.00%	6.50%	0.290%	0.5475%	0.3111%	25.00%
60	8.00%	6.50%	0.300%	0.6069%	0.3347%	28.00%
61	8.00%	6.50%	0.300%	0.6743%	0.3606%	28.00%
62	8.00%	6.50%	0.300%	0.7504%	0.3892%	25.00%
63	8.00%	6.50%	0.300%	0.8362%	0.4209%	22.00%
64	8.00%	6.50%	0.300%	0.9326%	0.4561%	25.00%
65	8.00%	6.50%	0.300%	1.0406%	0.4950%	35.00%
66	8.00%	6.50%	0.300%	1.1612%	0.5456%	25.00%
67	8.00%	6.50%	0.300%	1.2739%	0.6013%	25.00%
68	8.00%	6.50%	0.300%	1.3974%	0.6627%	30.00%
69	8.00%	6.50%	0.300%	1.5330%	0.7303%	30.00%
70	8.00%	6.50%	0.300%	1.6816%	0.8049%	30.00%
71	8.00%	6.50%	0.300%	1.8447%	0.8871%	30.00%
72	8.00%	6.50%	0.300%	2.0237%	0.9777%	30.00%
73	8.00%	6.50%	0.300%	2.2199%	1.0775%	35.00%
74	8.00%	6.50%	0.300%	2.4353%	1.1875%	35.00%
75	8.00%	6.50%	0.300%	2.6715%	1.3088%	100.00%



APPENDIX D

TABLE 2
POLICE OFFICERS' RETIREMENT PLAN
RATES OF SEPARATION FROM ACTIVE SERVICE

Age	Rates of Withdrawal		Rates of Disability		Rates of Death	
	Males	Females	Males	Females	Males	Females
19	5.00%	5.00%	0.030%	0.020%	0.0559%	0.0222%
20	5.00%	5.00%	0.030%	0.020%	0.0615%	0.0214%
21	5.00%	5.00%	0.036%	0.026%	0.0671%	0.0218%
22	5.00%	5.00%	0.042%	0.032%	0.0730%	0.0222%
23	5.00%	5.00%	0.048%	0.038%	0.0760%	0.0226%
24	5.00%	5.00%	0.054%	0.044%	0.0770%	0.0231%
25	5.00%	5.00%	0.060%	0.050%	0.0752%	0.0236%
26	4.85%	4.90%	0.070%	0.060%	0.0733%	0.0244%
27	4.70%	4.80%	0.080%	0.070%	0.0720%	0.0255%
28	4.55%	4.70%	0.090%	0.080%	0.0712%	0.0268%
29	4.40%	4.60%	0.100%	0.090%	0.0709%	0.0283%
30	4.25%	4.50%	0.110%	0.100%	0.0711%	0.0299%
31	3.95%	4.30%	0.120%	0.110%	0.0717%	0.0317%
32	3.65%	4.10%	0.130%	0.120%	0.0726%	0.0336%
33	3.35%	3.90%	0.140%	0.130%	0.0739%	0.0356%
34	3.05%	3.70%	0.150%	0.140%	0.0756%	0.0376%
35	2.75%	3.50%	0.160%	0.150%	0.0775%	0.0397%
36	2.50%	3.10%	0.174%	0.180%	0.0797%	0.0417%
37	2.25%	2.70%	0.188%	0.210%	0.0820%	0.0441%
38	2.00%	2.30%	0.202%	0.240%	0.0846%	0.0470%
39	1.75%	1.90%	0.216%	0.270%	0.0875%	0.0505%
40	1.50%	1.50%	0.230%	0.300%	0.0912%	0.0547%
41	1.50%	1.50%	0.248%	0.320%	0.0958%	0.0598%
42	1.50%	1.50%	0.266%	0.340%	0.1019%	0.0658%
43	1.50%	1.50%	0.284%	0.360%	0.1096%	0.0730%
44	1.50%	1.50%	0.302%	0.380%	0.1194%	0.0812%
45	1.50%	1.50%	0.320%	0.400%	0.1313%	0.0907%
46	1.50%	1.50%	0.340%	0.440%	0.1455%	0.1013%
47	1.50%	1.50%	0.360%	0.480%	0.1619%	0.1130%
48	1.50%	1.50%	0.380%	0.520%	0.1806%	0.1258%
49	1.50%	1.50%	0.400%	0.560%	0.2015%	0.1394%
50	1.50%	1.50%	0.420%	0.600%	0.2243%	0.1537%
51	1.50%	1.50%	0.424%	0.620%	0.2490%	0.1685%
52	1.50%	1.50%	0.428%	0.640%	0.2757%	0.1839%
53	1.50%	1.50%	0.432%	0.660%	0.3045%	0.1997%
54	1.50%	1.50%	0.436%	0.680%	0.3357%	0.2162%
55	1.50%	1.50%	0.440%	0.700%	0.3697%	0.2332%
56	1.50%	1.50%	0.454%	0.760%	0.4071%	0.2510%
57	1.50%	1.50%	0.468%	0.820%	0.4485%	0.2697%
58	1.50%	1.50%	0.482%	0.880%	0.4950%	0.2896%
59	1.50%	1.50%	0.496%	0.940%	0.5475%	0.3111%
60	1.50%	1.50%	0.510%	1.000%	0.6069%	0.3347%
61	1.50%	1.50%	0.510%	1.000%	0.6743%	0.3606%
62	1.50%	1.50%	0.510%	1.000%	0.7504%	0.3892%
63	1.50%	1.50%	0.510%	1.000%	0.8362%	0.4209%
64	1.50%	1.50%	0.510%	1.000%	0.9326%	0.4561%
65	1.50%	1.50%	0.510%	1.000%	1.0406%	0.4950%
66	1.50%	1.50%	0.510%	1.000%	1.1612%	0.5456%
67	1.50%	1.50%	0.510%	1.000%	1.2739%	0.6013%
68	1.50%	1.50%	0.510%	1.000%	1.3974%	0.6627%
69	1.50%	1.50%	0.510%	1.000%	1.5330%	0.7303%
70	1.50%	1.50%	0.510%	1.000%	1.6816%	0.8049%
71	1.50%	1.50%	0.510%	1.000%	1.8447%	0.8871%
72	1.50%	1.50%	0.510%	1.000%	2.0237%	0.9777%
73	1.50%	1.50%	0.510%	1.000%	2.2199%	1.0775%
74	1.50%	1.50%	0.510%	1.000%	2.4353%	1.1875%
75	1.50%	1.50%	0.510%	1.000%	2.6715%	1.3088%



APPENDIX D

TABLE 3
FIREFIGHTERS' RETIREMENT PLAN
RATES OF SEPARATION FROM ACTIVE SERVICE

Age	Rates of Withdrawal	Rates of Disability	Rates of Death	
			Males	Females
19	3.00%	0.010%	0.0559%	0.0222%
20	3.00%	0.010%	0.0615%	0.0214%
21	3.00%	0.010%	0.0671%	0.0218%
22	3.00%	0.020%	0.0730%	0.0222%
23	3.00%	0.030%	0.0760%	0.0226%
24	3.00%	0.040%	0.0770%	0.0231%
25	3.00%	0.050%	0.0752%	0.0236%
26	2.92%	0.076%	0.0733%	0.0244%
27	2.84%	0.102%	0.0720%	0.0255%
28	2.76%	0.128%	0.0712%	0.0268%
29	2.68%	0.154%	0.0709%	0.0283%
30	2.60%	0.180%	0.0711%	0.0299%
31	2.44%	0.194%	0.0717%	0.0317%
32	2.28%	0.208%	0.0726%	0.0336%
33	2.12%	0.222%	0.0739%	0.0356%
34	1.96%	0.236%	0.0756%	0.0376%
35	1.80%	0.250%	0.0775%	0.0397%
36	1.72%	0.260%	0.0797%	0.0417%
37	1.64%	0.270%	0.0820%	0.0441%
38	1.56%	0.280%	0.0846%	0.0470%
39	1.48%	0.290%	0.0875%	0.0505%
40	1.40%	0.300%	0.0912%	0.0547%
41	1.36%	0.310%	0.0958%	0.0598%
42	1.32%	0.320%	0.1019%	0.0658%
43	1.28%	0.330%	0.1096%	0.0730%
44	1.24%	0.340%	0.1194%	0.0812%
45	1.20%	0.350%	0.1313%	0.0907%
46	1.20%	0.360%	0.1455%	0.1013%
47	1.20%	0.370%	0.1619%	0.1130%
48	1.20%	0.380%	0.1806%	0.1258%
49	1.20%	0.390%	0.2015%	0.1394%
50	1.20%	0.400%	0.2243%	0.1537%
51	1.12%	0.410%	0.2490%	0.1685%
52	1.04%	0.420%	0.2757%	0.1839%
53	0.96%	0.430%	0.3045%	0.1997%
54	0.88%	0.440%	0.3357%	0.2162%
55	0.80%	0.450%	0.3697%	0.2332%
56	0.76%	0.460%	0.4071%	0.2510%
57	0.72%	0.470%	0.4485%	0.2697%
58	0.68%	0.480%	0.4950%	0.2896%
59	0.64%	0.490%	0.5475%	0.3111%
60	0.60%	0.500%	0.6069%	0.3347%
61	0.60%		0.6743%	0.3606%
62	0.60%		0.7504%	0.3892%
63	0.60%		0.8362%	0.4209%
64	0.60%		0.9326%	0.4561%
65	0.60%		1.0406%	0.4950%
66	0.60%		1.1612%	0.5456%
67	0.60%		1.2739%	0.6013%
68	0.60%		1.3974%	0.6627%
69	0.60%		1.5330%	0.7303%
70	0.60%		1.6816%	0.8049%
71	0.60%		1.8447%	0.8871%
72	0.60%		2.0237%	0.9777%
73	0.60%		2.2199%	1.0775%
74	0.60%		2.4353%	1.1875%
75	0.60%		2.6715%	1.3088%



APPENDIX D

TABLE 4
POLICE OFFICERS' AND FIREFIGHTERS' RETIREMENT PLAN
RATES OF RETIREMENT FROM ACTIVE SERVICE

Years of Service	Police*	Fire**
20	15.0%	12.5%
21	15.0%	12.5%
22	15.0%	12.5%
23	15.0%	12.5%
24	15.0%	12.5%
25	22.0%	12.5%
26	38.0%	15.0%
27	35.0%	12.0%
28	34.0%	20.0%
29	28.0%	20.0%
30	38.0%	22.0%
31	32.0%	40.0%
32	28.0%	45.0%
33	35.0%	50.0%
34	35.0%	40.0%
35	18.0%	40.0%
36	16.0%	40.0%
37	16.0%	40.0%
38	16.0%	40.0%
39	16.0%	40.0%
40+	16.0%	40.0%

*Assumed rate of retirement is 100% at age 65 for Police Officers, regardless of service.

**Assumed rate of retirement is 100% at age 60 for Firefighters, regardless of service.



APPENDIX D

TABLE 5

**RATES OF MORTALITY FOR MEMBERS RETIRED ON ACCOUNT OF SERVICE
AND BENEFICIARIES OF DECEASED MEMBERS**

Age	Males	Females	Age	Males	Females
19	0.0559%	0.0222%	70	1.9399%	1.4553%
20	0.0615%	0.0214%	71	2.1101%	1.6038%
21	0.0671%	0.0218%	72	2.2991%	1.7695%
22	0.0730%	0.0222%	73	2.5091%	1.9529%
23	0.0760%	0.0226%	74	2.7430%	2.1549%
24	0.0770%	0.0231%	75	3.0040%	2.3766%
25	0.0752%	0.0236%	76	3.2952%	2.6199%
26	0.0733%	0.0244%	77	3.6204%	2.8876%
27	0.0720%	0.0255%	78	3.9835%	3.1836%
28	0.0712%	0.0268%	79	4.3889%	3.5127%
29	0.0709%	0.0283%	80	4.8414%	3.8805%
30	0.0711%	0.0299%	81	5.3460%	4.2932%
31	0.0717%	0.0317%	82	5.9081%	4.7576%
32	0.0726%	0.0336%	83	6.5333%	5.2808%
33	0.0739%	0.0356%	84	7.2280%	5.8698%
34	0.0756%	0.0376%	85	7.9987%	6.5321%
35	0.0775%	0.0397%	86	8.8524%	7.2752%
36	0.0797%	0.0417%	87	9.7971%	8.1081%
37	0.0820%	0.0441%	88	10.8417%	9.0408%
38	0.0846%	0.0470%	89	11.9965%	10.0848%
39	0.0875%	0.0505%	90	13.2734%	11.2535%
40	0.0912%	0.0547%	91	14.6859%	12.5111%
41	0.0958%	0.0598%	92	16.1673%	13.8377%
42	0.1019%	0.0658%	93	17.6800%	15.2252%
43	0.1096%	0.0730%	94	19.2095%	16.6747%
44	0.1194%	0.0812%	95	20.7589%	18.1931%
45	0.1313%	0.0907%	96	22.3428%	19.7901%
46	0.1455%	0.1013%	97	23.9822%	21.4754%
47	0.1619%	0.1130%	98	25.6980%	23.2551%
48	0.1806%	0.1258%	99	27.5058%	25.1285%
49	0.2015%	0.1394%	100	29.4103%	27.0858%
50	0.2243%	0.4105%	101	31.3988%	29.1040%
51	0.5604%	0.4235%	102	33.4365%	31.1444%
52	0.5906%	0.4381%	103	35.4599%	33.1900%
53	0.6229%	0.4544%	104	37.4524%	35.2232%
54	0.6574%	0.4727%	105	39.3982%	37.2273%
55	0.6944%	0.4933%	106	41.2831%	39.1860%
56	0.7342%	0.5165%	107	43.0946%	41.0849%
57	0.7771%	0.5428%	108	44.8227%	42.9112%
58	0.8234%	0.5726%	109	46.4592%	44.6544%
59	0.8736%	0.6066%	110	47.9987%	46.3061%
60	0.9286%	0.6452%	111	49.4376%	47.8604%
61	0.9893%	0.6890%	112	50.0000%	49.3137%
62	1.0567%	0.7383%	113	50.0000%	50.0000%
63	1.1314%	0.7940%	114	50.0000%	50.0000%
64	1.2145%	0.8570%	115	50.0000%	50.0000%
65	1.3067%	0.9283%	116	50.0000%	50.0000%
66	1.4089%	1.0092%	117	50.0000%	50.0000%
67	1.5221%	1.1010%	118	50.0000%	50.0000%
68	1.6475%	1.2051%	119	50.0000%	50.0000%
69	1.7862%	1.3227%	120	100.0000%	100.0000%



APPENDIX D

TABLE 6

RATES OF MORTALITY FOR MEMBERS RETIRED ON ACCOUNT OF DISABILITY

Age	Males	Females	Age	Males	Females
19	0.0285%	0.2642%	70	3.2231%	4.7498%
20	0.0285%	0.2758%	71	3.3611%	5.1467%
21	0.0285%	0.2898%	72	3.5133%	5.5788%
22	0.0350%	0.3059%	73	3.6812%	6.0488%
23	0.0412%	0.3239%	74	3.8660%	6.5593%
24	0.5873%	0.3433%	75	4.0690%	7.1128%
25	0.6461%	0.3638%	76	4.2916%	7.7121%
26	0.7048%	0.3852%	77	4.5353%	8.3602%
27	0.7662%	0.4071%	78	4.8018%	9.0599%
28	0.7982%	0.4292%	79	5.0929%	9.8144%
29	0.8089%	0.4513%	80	5.4109%	10.6271%
30	0.7896%	0.4774%	81	5.7583%	11.5016%
31	0.7700%	0.5088%	82	6.1382%	12.4419%
32	0.7563%	0.5465%	83	6.5542%	13.4525%
33	0.7480%	0.5921%	84	7.0106%	14.5555%
34	0.7449%	0.6469%	85	7.5122%	15.7466%
35	0.7466%	0.7122%	86	8.0642%	17.0213%
36	0.7527%	0.7891%	87	8.6728%	18.3751%
37	0.7628%	0.8786%	88	9.3445%	19.8037%
38	0.7766%	0.9809%	89	10.0864%	21.3026%
39	0.7938%	1.0253%	90	10.9061%	22.8674%
40	0.8139%	1.0693%	91	11.8114%	24.4937%
41	0.8366%	1.1127%	92	12.8104%	26.1771%
42	0.8616%	1.1555%	93	13.9118%	27.9130%
43	0.8883%	1.1977%	94	15.1248%	29.6972%
44	0.9193%	1.2394%	95	16.4592%	31.5251%
45	0.9575%	1.2806%	96	17.9257%	33.3924%
46	1.0066%	1.3215%	97	19.3867%	35.2946%
47	1.0701%	1.3624%	98	20.8457%	37.2273%
48	1.1515%	1.4036%	99	22.3065%	39.1860%
49	1.2537%	1.4458%	100	23.7725%	41.0849%
50	1.3787%	1.4897%	101	25.2475%	42.9112%
51	1.5276%	1.5362%	102	26.7351%	44.6544%
52	1.6184%	1.5864%	103	28.2387%	46.3061%
53	1.7079%	1.6414%	104	29.7622%	47.8604%
54	1.7959%	1.7026%	105	31.3090%	49.3137%
55	1.8825%	1.7714%	106	32.8828%	50.0000%
56	1.9674%	1.8494%	107	34.4872%	50.0000%
57	2.0507%	1.9381%	108	36.1258%	50.0000%
58	2.1324%	2.0392%	109	37.8023%	50.0000%
59	2.2126%	2.1541%	110	39.5201%	50.0000%
60	2.2916%	2.2844%	111	41.2831%	50.0000%
61	2.3700%	2.4317%	112	43.0946%	50.0000%
62	2.4484%	2.5974%	113	44.8227%	100.0000%
63	2.5279%	2.7828%	114	46.4592%	50.0000%
64	2.6094%	2.9893%	115	47.9987%	100.0000%
65	2.6943%	3.2181%	116	49.4376%	50.0000%
66	2.7840%	3.4705%	117	50.0000%	50.0000%
67	2.8800%	3.7482%	118	50.0000%	50.0000%
68	2.9841%	4.0527%	119	50.0000%	50.0000%
69	3.0979%	4.3859%	120	100.0000%	100.0000%



APPENDIX D

TABLE 7
RATES OF ANTICIPATED SALARY INCREASES

Years of Service	Teachers	Police	Fire
<1	8.3680%	9.7200%	7.1200%
1	8.3680%	9.2000%	7.1200%
2	8.3680%	7.6400%	7.1200%
3	8.3680%	7.1200%	7.1200%
4	8.3680%	6.6000%	7.1200%
5	8.3680%	6.0800%	7.1200%
6	8.1600%	6.0800%	7.1200%
7	7.9520%	6.0800%	7.1200%
8	7.7440%	6.0800%	7.1200%
9	7.5360%	6.0800%	7.1200%
10	7.3280%	6.0800%	7.1200%
11	6.2880%	6.0800%	7.1200%
12	5.4560%	6.0800%	7.1200%
13	5.2480%	6.0800%	7.1200%
14	5.2480%	7.5360%	7.1200%
15	5.2480%	6.0800%	9.2000%
16	5.2480%	6.0800%	5.3000%
17	5.2480%	6.0800%	5.3000%
18	5.2480%	6.0800%	5.3000%
19	5.2480%	12.7360%	5.3000%
20	5.2480%	5.8200%	9.2000%
21	5.2480%	5.5600%	5.3000%
22	5.2480%	5.3000%	5.3000%
23	5.2480%	5.0400%	5.3000%
24	5.2480%	7.3280%	5.3000%
25	5.2480%	4.7800%	9.2000%
26	5.2480%	4.5200%	5.3000%
27	5.2480%	4.2600%	5.3000%
28	5.2480%	4.0000%	5.3000%
29	5.2480%	7.2240%	5.3000%
30	5.2480%	4.0000%	9.2000%
31+	5.2480%	4.0000%	5.3000%



Funding Policy

Approved by the Board of Trustees

Adopted: November 15, 2012

The purpose of the funding policy is to state the overall funding goals for DCRB, the benchmarks that will be used to measure progress in achieving those goals, and the methods and assumptions that will be employed to develop the benchmarks.

I. Funding Goals

The objective in requiring employer and member contributions to the Plan is to accumulate sufficient assets during a member's employment to fully finance the benefits the member receives throughout retirement. In meeting this objective, the Plan will strive to meet the following funding goals:

- To maintain an increasing or stable ratio of Plan assets to accrued liabilities and reach a 100 percent minimum funded ratio;
- To maintain adequate asset levels to finance the benefits promised to members;
- To develop a pattern of stable or declining contribution rates when expressed as a percentage of member payroll as measured by valuations prepared in accordance with the principles of practice prescribed by the Actuarial Standards Board, with a minimum employer contribution equal to the normal cost determined under the Entry Age Normal funding method;
- To provide intergenerational equity for taxpayers with respect to Plan costs; and
- To fund benefit improvements through increases in contribution rates in accordance with statute.

II. Benchmarks

To track progress in achieving the previously outlined funding goals, the following benchmarks will be measured annually as of the actuarial valuation date (with due recognition that a single year's results may not be indicative of long-term trends):

- **Funded ratio** – The funded ratio, defined as the actuarial value of Plan assets divided by the Plan's actuarial accrued liability, should be increasing over time, before adjustments for changes in benefits, actuarial methods, and/or actuarial assumptions, with a target of at least 100 percent.

- **Contribution rate history** – Employer and member contribution rates should be relatively stable or declining from year to year when expressed as a percent of active member payroll.
- **Unfunded Actuarial Accrued Liability (UAAL) amortization period** – The amortization period for the Plan's UAAL will be set to 20 years in 2012 and will be closed and set to decline one year each year until a funded ratio of 100 percent is reached. The amortization of the UAAL will be developed using the level dollar methodology.

III. Methods and Assumptions

The actuarial funding method used to develop the benchmarks will be entry age normal. The method used to develop the actuarial value of assets will recognize the underlying market value of the assets by spreading each year's unanticipated investment income (gains and losses) over a seven-year smoothing period (1/7th per year), as adopted by the Board.

The actuarial assumptions used will be those last adopted by the Board based upon the advice and recommendation of the Plan's actuary. The actuary shall conduct an investigation into the Plan's experience at least every three to five years, and utilize the results of the investigation to form the basis for those recommendations.

The Board will have an audit of the Plan's actuarial valuation results conducted by an independent actuary at least every five years. The purpose of such a review is to provide a critique of the reasonableness of the actuarial methods and assumptions in use and the resulting actuarially computed liabilities and contribution rates.

IV. Funding Policy Review

The funding policy components will be reviewed and amended as necessary following each experience investigation conducted by the Board.

**DISTRICT OF COLUMBIA RETIREMENT BOARD
RECORD OF OFFICIAL BOARD ACTIONS**

BOARD MOTION TALLY #3			DATE: 11/15/2012		
To approve the proposed DCRB Funding Policy which requires DCRB: to use the entry age normal funding method to meet its funding goals; to use a 20 year amortization period for the unfunded actuarial accrued liability; to use a seven-year smoothing period; to conduct an actuarial experience study at least every three to five years; to have an independent audit of the actuarial valuation results at least every five years.					
MEMBERS	AYE	NAY/ OPPOSE	NO VOTE/ ABSTAIN	NO VOTE/ RECUSE	ABSENT
BLANCHARD, LYLE M.	X				
BLUM, BARBARA DAVIS	X				
BRESS, JOSEPH M.	X				
BULGER, DIANA K.	X				
BUNN, JAMES E.	X				
HENSLEY, DEBORAH	X				
MARCUS, JUDITH C.	X				
ROSS, DARRICK O	X				
SMITH, EDWARD C.	X				
SUTER, GEORGE R.	X				
TIPPETT, THOMAS N.	X				
WARREN, MICHAEL J.	X				

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E-mail: dcrb@dc.gov

DISTRICT OF COLUMBIA RETIREMENT BOARD

MOTION:

**TO APPROVE CERTAIN SUBSTANTIVE AND TECHNICAL AMENDMENTS TO
THE DCRB OPERATIONS COMMITTEE CHARTER.**

PRESENTED TO THE BOARD ON JUNE 22, 2017

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DISTRICT OF COLUMBIA RETIREMENT BOARD

MOTION:

TO AUTHORIZE THE INTERIM EXECUTIVE DIRECTOR TO ISSUE A REQUEST FOR PROPOSAL TO ACQUIRE AN E-PROCUREMENT SYSTEM THAT MEETS DCRB'S NEEDS AND IS COMPATIBLE WITH DCRB'S FINANCIAL MANAGEMENT SYSTEM.

PRESENTED TO THE BOARD ON JUNE 22, 2017

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TO: BOARD OF TRUSTEES

FROM: EDWARD SMITH, CHAIRMAN

DATE: JUNE 22, 2017

SUBJECT: BENEFITS COMMITTEE REPORT

The Benefits Committee met on June 20, 2017. The following report reflects Benefits Department activities and projects that occurred since the last Board meeting.

Benefits Committee Charter

The Benefits Committee reviewed and updated the Benefits Committee Charter at its meeting earlier this week on Tuesday, June 20. The Benefits Committee recommends the following motion to the Board:

MOTION: To approve the attached substantive and technical amendments to the DCRB Benefits Committee Charter.

Retiree Self Service Module

Benefits Staff presented a video of a proposed Self-Service Module currently undergoing construction by Benefits Staff and IT Staff for retirees of the Police & Fire Plan and the Teachers' Plan. Once the module is complete and properly vetted by all appropriate DCRB Staff, it will be presented to the full Board.

Annual Estimated Benefits Statement Project

The Estimated Benefits Statement Project for active firefighter participants of the Police & Fire Plan is now complete. Approximately 1,700 Estimated Benefits Statements were mailed. Benefits Staff is pleased with the success of this effort and will use lessons learned in preparing statements for active police officers and teacher participants of the Police & Fire Plan and the Teachers' Plan. Staff anticipates issuing statements to a pilot group of these participants in November 2017.

Annuitant Verification Project

As a standard best practice to ensure that benefits are not paid to deceased annuitants, staff mailed verification letters to a selected 359 annuitants with a proof-of-life response date of June 30, 2017. Non-responders will be mailed a second letter in early July, followed by a third and last letter, if necessary, before suspending benefit payments beginning in September.

Returned and Undeliverable Mail Project

Like the Annuitant Verification process, to ensure that only living annuitants are receiving benefit payments, annuitants whose mail is consistently returned to DCRB as undeliverable will be subject to further scrutiny by staff. Staff will take steps similar to those in its internal Missing

Participant Policy to contact and locate annuitants prior to notifying them of any possible benefit payment suspension.

Legislative Updates

DCRB Benefits and Legal staff has suggested to the District, technical amendments to clarify Replacement Plan provisions. These amendments are summarized below.

- Reinstatement grandfather language limiting the application of the Internal Revenue Service's annual compensation limit to Replacement Plan members hired on or after October 1, 2002.
- Clarify that domestic partners of deceased Police & Fire Plan members may be eligible for survivor benefits.
- Clarify the Police & Fire Plan's acceptance of transferred 401(a) monies for the purchase of prior FEMS service.

Disability Annuitant Earned Income Review Project

The 2016 Annual Earned Income Verification Project is underway. A presentation of the Earned Income Review was provided at the Benefits Committee Meeting earlier this week on Tuesday, June 20. The presentation highlighted the administrative and legal complexities encountered by staff in continued implementation. After a discussion about changes needed for both the Teachers' and Police & Fire Plans, the Benefits Committee recommends the following motion to the Board.

MOTION: That the Board: (i) support the repeal of the disability retirement earned income 80% earning limit test provisions in both the Teachers' and Police Officers and Firefighters' Retirement Replacement Plans; and (ii) authorize DCRB staff to discuss the disability retirement earned income 70% reduction test in the Police Officers and Firefighters' Retirement Replacement Plan with the District for possible repeal and/or amendments before any implementation.

Benefits Department Monthly Statistics

Activity	May	April	March
Retirement Claims Received	134	104	104
Processed Retirements	126	127	120
Average Processing Days	55	60	53
Telephone Calls	3,707	3,626	4,263
Walk-in Customers	113	114	125
Scanned Documents	7,028	6,009	10,800
QDROs Approved	1 final, 1 rejected	0 final	0 final
Purchase of Service	3, (\$9,988.76)	2 (\$ 5,493.36)	2 (\$1,524.68)

You will find more details of the Benefits Department statistics in the attached reports.



CHARTER DISTRICT OF COLUMBIA RETIREMENT BOARD BENEFITS COMMITTEE

INTRODUCTION

The Benefits Committee has been established to develop and oversee the execution of prudent policies and procedures relating to levels of benefits and the delivery of services to Plan participants and beneficiaries.

AUTHORITY

To monitor and recommend to the District of Columbia Retirement Board (Board) actions with respect to member benefits, including levels of service, member communications, and all other questions relating to the design and administration of the District of Columbia Police Officers and Firefighters' Plan and the Teachers' Retirement Plans' (the "Plans") benefits structure established pursuant to the Police Officers, Fire Fighters, and Teachers Retirement Benefit Replacement Plan Act of 1998.

COMPOSITION

The Committee shall be composed of a minimum of three (3) members appointed by the Chairperson of the Board.

MEETINGS

The Committee will meet as determined by the Committee Chair in consultation with the Chief Benefits Officer and Chair of the Board.

RESPONSIBILITIES

The Benefits Committee shall be responsible for the following matters and shall report these matters to the Board for its action:

1. Review Board policies and procedures for the compliance and administration of member benefits;
2. Recommend goals and objectives concerning the delivery of member services; and

3. Oversee the management of the third-party benefits administration responsibilities are fulfilled as outlined in the September 26, 2005 Memorandum of Understanding Concerning Interim Benefit Administration of Retirement Programs (MOU).

	The Board approve the Benefits Committee Charter.				DATE: 06/20/17
MEMBERS	AYE	NAY/ OPPOSE	NO VOTE/ ABSTAIN	NO VOTE/ RECUSE	ABSENT
SMITH, ED	✓				
COLLINS, MARY	✓				
BRESS, JOE	✓				
SAUNDERS, NATHAN	✓				
WASHINGTON, LENDA	✓				

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DISTRICT OF COLUMBIA RETIREMENT BOARD

The Benefits Committee reviewed and updated the Benefits Committee Charter at its meeting earlier this week on Tuesday, June 20. The Benefits Committee recommends the following motion to the Board:

MOTION:

To approve the attached substantive and technical amendments to the DCRB Benefits Committee Charter.

PRESENTED TO THE BOARD ON JUNE 22, 2017



RETIREMENT CASE PROCESSING – JUNE 1, 2017 REPORT

CASES AVAILABLE FOR PROCESSING	CASES RECEIVED (but may not have been ready for payment)	CASES PROCESSED	CASE TYPE	PLAN		
				Fire	Police	Teacher
59	39	20	Beneficiary (One-Time Payments)	0	11	9
8	5	3	Deferred Annuity	0	1	2
1	0	1	Disability	1	0	0
7	0	7	Garnishment/Levy	0	5	2
7	0	7	Health/Life Adjustments	4	0	3
44	15	29	Optional/Voluntary & Involuntary Annuity	4	23	2
7	3	4	QDRO/QMSCO	0	4	0
17	6	11	Survivor Annuity	4	6	1
1	0	1	Student Certifications	1	0	0
19	11	8	Annuity Adjustments	1	5	2
1	0	1	Auto Debt Collections	0	1	0
18	14	4	Octo Review Monetary & Non Monetary Adjustments	1	2	1
3	3	0	Post 56 Adjustments	0	0	0
1	1	0	CAPS*	0	0	0
67	37	30	Refund of Contributions**	0	5	25
260	134	126		16	63	47
			Gross Dollar Value of Refunds**	\$0.00	\$101,899.96	\$493,332.37

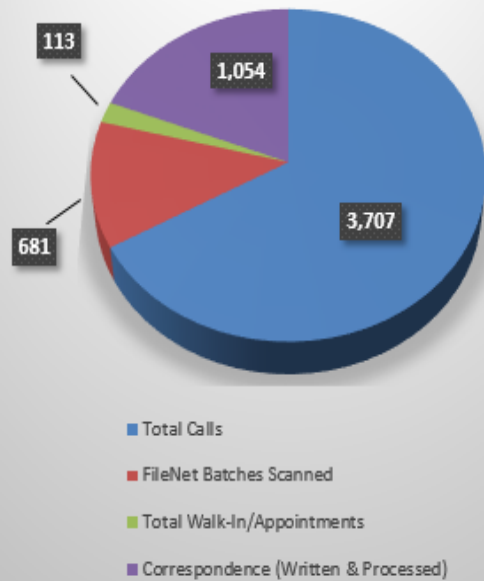
* Corrective Action Project



DCRB Member Services Center Statistics May 2017

Call Center Statistics

Total Calls	3,707
<i>Inbound Calls</i>	2,656
<i>Outbound Calls (Voicemails & Follow-up calls)</i>	1,051
<i>Average Talk Time</i>	4:14 minutes
<i>Average Caller Wait Time</i>	2:45 minutes
Total Walk-In/Appointments	113
FileNet Batches Scanned	681
<i>Documents Pages Scanned</i>	7,028
Correspondence (Written & Processed)	1,054
<i>Email & Fax</i>	562
<i>Processed Documents (EFTs, address & name changes, tax forms, 1099s, & 2809s, etc.)</i>	492
Total	5,555



Top 3 Contact Trends

Demographic Changes	<ol style="list-style-type: none"> 1. Address change (<i>home and mailing address</i>) 2. Update of contact information (email & phone numbers) 3. Requests for address change forms
Death Notification	<ol style="list-style-type: none"> 1. Notification of a death 2. Questions about completing Beneficiary and Survivor forms 3. General inquiries regarding unpaid deceased member contributions
Health Insurance	<ol style="list-style-type: none"> 1. Health Benefit premium refund requests 2. Request for DCRB to submit change of address forms to insurance carriers 3. Medicare Parts A & B Eligibility questions & retiree benefits

Member Services May Statistical Comparison by Year

	2016	2017	Comments
Walk-Ins/Appointments	151	113	
Total Calls (<i>includes voice mails</i>)	2,460	3,707	1247 increased call volume
Emails	552	420	
Total	3,163	4,240	1077 Total overall increase from last year



MEMBER SERVICES CUSTOMER SATISFACTION SURVEY May 2017

Background

The reported survey outcomes are the results of the May 2017 Member Services Customer Satisfaction Survey. The data collected are from active and retired members of the District of Columbia Police Officers and Firefighters' and Teachers' Retirement Plans, their survivors and beneficiaries. The purpose of the survey is to gather and measure the customer experience, gaging their satisfaction in an effort to improve our service to them, as necessary.

Survey Objective

The resulting feedback will be used to:

- Increase member satisfaction and confidence
- Deliver actionable data to decision-makers
- Reduce caller and in-person wait times for service
- Set reasonable service expectations

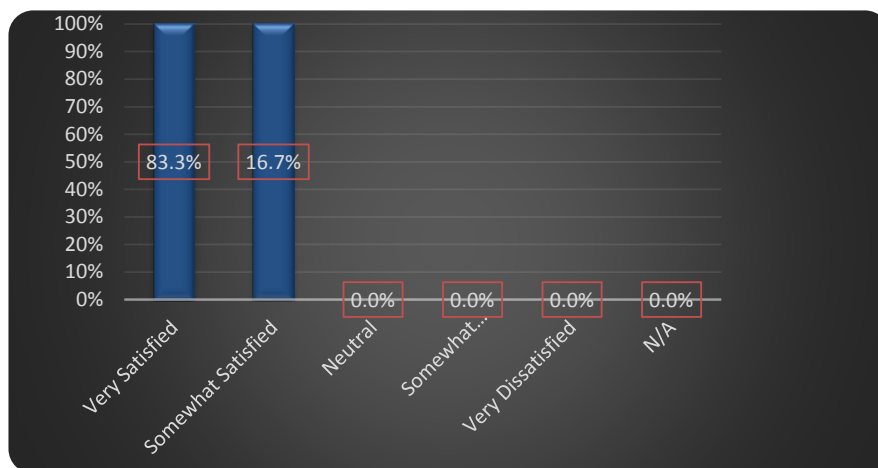
Methodology

- This month, survey participants were Plan members who made onsite visits to the DCRB member Service Center and members who contacted the center by email to the dcrb.benefits@dc.gov address. Some members arrived after having scheduled an appointment; others came in for assistance with updating their member information. The survey participants were randomly selected.

Participants

- 258 survey requests were provided to members and annuitants
- 31 responses were received.

Overall DCRB Member Satisfaction

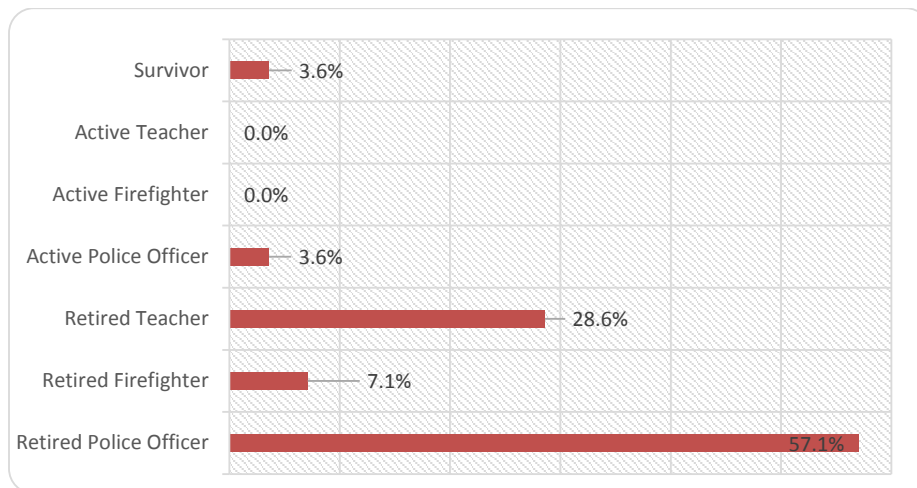




MEMBER SERVICES CUSTOMER SATISFACTION SURVEY May 2017

Overall, how satisfied are you with the member service provided by DCRB?		
AnswerOptions	ResponsePercent	ResponseCount
Very Satisfied	83.3%	25
Somewhat Satisfied	16.7%	5
Neutral	0.0%	0
Somewhat Dissatisfied	0.0%	0
Very Dissatisfied	0.0%	0
N/A	0.0%	0
AnsweredQuestion		30
SkippedQuestion		1

Membership/Survivor Type



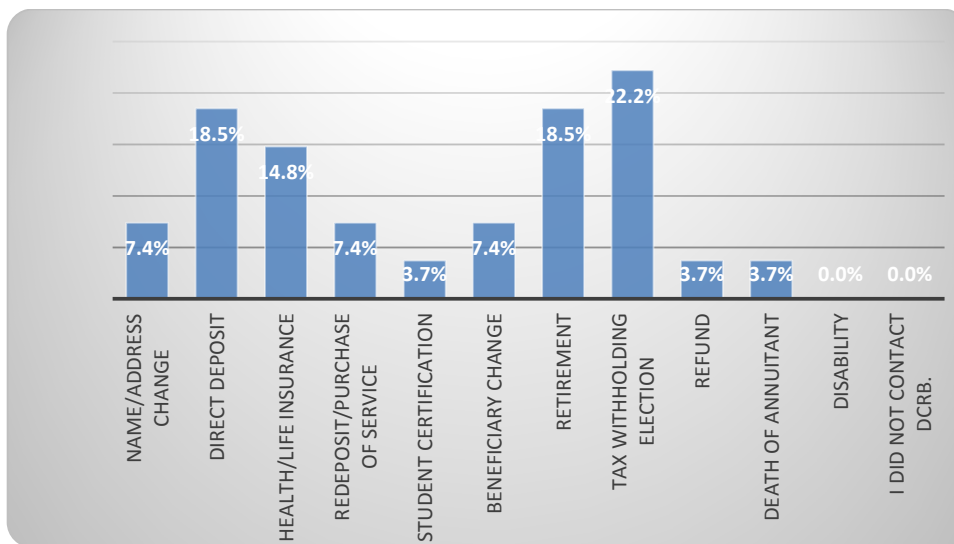
Knowledge and Skills

How satisfied were you with how the representative addressed your problem/inquiry?						
AnswerOptions	Strongly Agree	Agree	Neither Agree/Disagree	Disagree	Strongly Disagree	ResponseCount
Had the right information.	28	2	0	0	0	30
Understood your questions.	27	3	0	0	0	30
Provided clear answers.	27	3	0	0	0	30
Answered your questions.	25	4	0	0	0	29
Appeared well organized.	25	4	0	0	0	29
AnsweredQuestion						30
SkippedQuestion						1

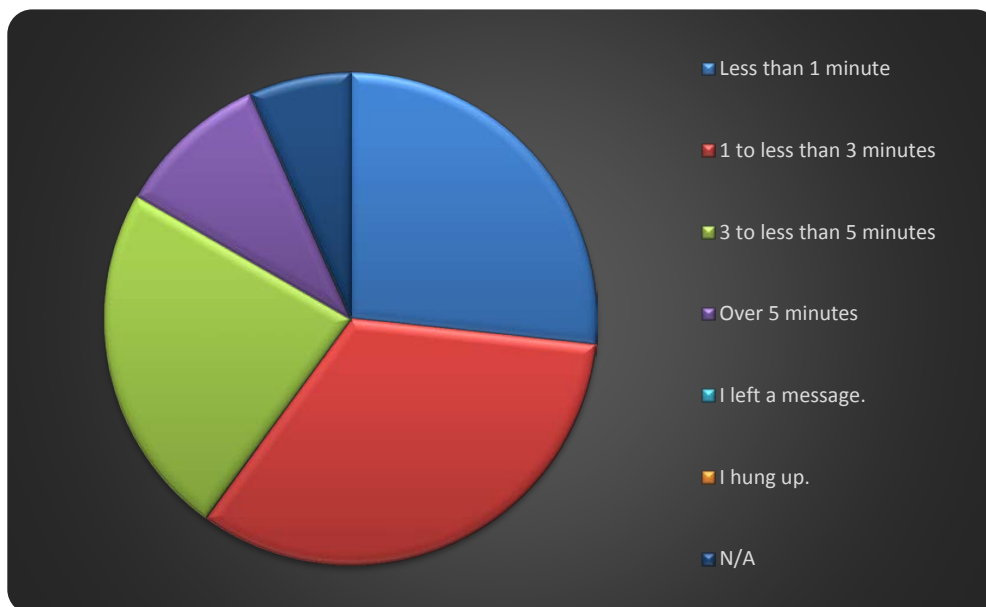


MEMBER SERVICES CUSTOMER SATISFACTION SURVEY May 2017

Reason for Contact



Contact Wait Time



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Washington, DC 20001
www.dcrb.dc.gov



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Facsimile (202) 566-5000
E-mail: dcrb@dc.gov

DISTRICT OF COLUMBIA RETIREMENT BOARD

MOTION:

That the Board: (i) support the repeal of the disability retirement earned income 80% earning limit test provisions in both the Teachers' and Police Officers and Firefighters' Retirement Replacement Plans; and (ii) authorize DCRB staff to discuss the disability retirement earned income 70% reduction test in the Police Officers and Firefighters' Retirement Replacement Plan with the District for possible repeal and/or amendments before any implementation.

PRESENTED TO THE BOARD ON JUNE 22, 2017

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TO: BOARD OF TRUSTEES
FROM: LYLE BLANCHARD, CHAIRMAN
DATE: JUNE 22, 2017

SUBJECT: LEGISLATIVE COMMITTEE REPORT

The following report reflects activities of interest since the May Board Meeting:

COUNCIL OF THE DISTRICT OF COLUMBIA

B22-0310, “Leave and Retirement Modifications for the Chief of Police Peter Newsham Emergency Amendment Act of 2017”

This bill will amend the Police and Firemen's Retirement and Disability Act to provide that Peter Newsham, as Chief of Police of the Metropolitan Police Department, shall be entitled to an annuity computed at 80% of his highest average base pay for 24 consecutive months upon voluntary retirement or separation from the Metropolitan Police Department.

Status: The bill was introduced on June 5, 2017, by Councilmember Allen, and retained by the Council.

PR22-0354, “Leave and Retirement Modifications for the Chief of Police Peter Newsham Emergency Declaration Resolution of 2017”

This proposed resolution declares the existence of an emergency need to amend the Police and Firemen's Retirement and Disability Act to provide that Peter Newsham, as Chief of Police of the Metropolitan Police Department, shall be entitled to an annuity computed at 80% of his highest average base pay for 24 consecutive months upon voluntary retirement or separation from the Metropolitan Police Department.

Status: The proposed resolution was introduced on June 5, 2017, by Councilmember Allen, and retained by the Council.

PR22-0326, “Collective Bargaining Agreement between the District of Columbia Government Metropolitan Police Department and the Fraternal Order of Police MPD Labor Committee (Compensation Unit 3) Approval Resolution of 2017”

The proposed resolution seeks approval of the negotiated Collective Bargaining Agreement between MPD and FOP governing the working conditions and compensation for sworn officers at the Metropolitan Police Department and will be effective until September 30, 2017.

Status: The proposed resolution was introduced on May 15, 2017, by Councilmember Mendelson at the request of the Mayor and was retained by the Council with comments from the Committee on Labor and Workforce Development. The proposed resolution was deemed approved on June 17, 2017.

OFFICE OF THE MAYOR

2017-134, “Appointment – Chief, Metropolitan Police Department”

This mayoral order appoints Peter Newsham as Chief of Police of the Metropolitan Police Department.

Status: The mayoral order was published in the District of Columbia Register on June 2, 2017. The order is effective *nunc pro tunc* (retroactively) to May 2, 2017.

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DISTRICT OF COLUMBIA RETIREMENT BOARD

MOTION:

**TO APPROVE CERTAIN SUBSTANTIVE AND TECHNICAL AMENDMENTS TO
THE DCRB LEGISLATIVE COMMITTEE CHARTER.**

PRESENTED TO THE BOARD ON JUNE 22, 2017

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TO: BOARD OF TRUSTEES

FROM: GARY HANKINS, CHAIRMAN

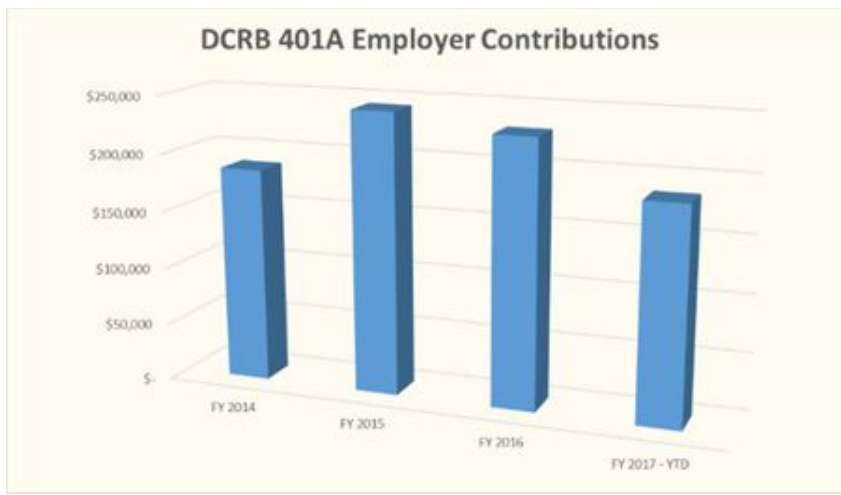
DATE: JUNE 22, 2017

SUBJECT: AUDIT COMMITTEE REPORT

Analysis of DCRB ICMA-RC 401A Employer Contribution

The following analysis of DCRB's employee participation in the 401A Plan was completed by the Finance Department. The table below shows information as of May 31, 2017, and is based on 57 employees, the total number of filled positions at the time the information was compiled.

- | | |
|--|------------|
| 1. Number of employees participating: | 52 |
| 2. Overall employee participation rate: | 91% |
| 3. Percentage of employees contributing over 5% - 49% | |
-



DCRB Contributions FY 2014:	\$186,274
DCRB Contributions FY 2015:	\$243,062
DCRB Contributions FY 2016:	\$229,990
DCRB Contributions YTD FY 2017:	\$185,496

Financials and the upcoming FY 2017 Audit

You will find the current year's financials, through April 30, 2017, in the Mobile Dashboard. They will be discussed in more detail in today's Board of Trustees meeting. Contact Anthony Shelborne if you have any questions.

The interim audit will begin in August. DCRB's audit firm of CliftonLarsonAllen will complete the fieldwork during the week of August 14 through August 18. The full audit will take place in November.

Work also continues by the Finance Team on DCRB's first Popular Annual Financial Report, which will be issued by September.

Audit Committee meeting, June 22, 2017

In the June 22, 2017, the Audit Committee will examine risk from several perspectives. First we will have a presentation by our insurance broker, AON Risk Services. They will discuss the DCRB insurance program and will also discuss two new types of coverage, Specialty Professional Liability—in the form of Errors and Omissions coverage—and Director's and Officers' coverage.

Next we will have a FISMA assessment presentation. FISMA, or the Federal Information Security Management Act, is federal legislation that defines a comprehensive framework to protect information and operations for government. Dakota Consulting will talk about DCRB's readiness and give an independent assessment of our security capability.

Finally, DCRB's IT staff will give a presentation on our Cyber Incident Response Preparation and Plan. You will find copies of all presentations in your Board package.

June 22, 2017

FISMA Assessment

Introduction



Introduction

- FISMA assessment
- Security Assessment and Authorization



Internal Agency Use Only

FISMA Assessment

Agenda



Agenda

- Scope and purpose
- Caveats
- Techniques
- Results
- Lessons learned
- Recommendations
- Questions

Internal Agency Use Only

FISMA Assessment

Scope and Purpose



Adapted FISMA 2014 Requirements

- Reduce and Manage the Agency's Risks
- Confidentiality, Integrity, Availability
- Maintain security of data and assets
- Work with US Department of Treasury
 - earn and maintain trust
 - Meet NIST and Federal security standards
- Independent impartial assessment of security capability

Internal Agency Use Only

FISMA Assessment

Data Management
System



PASS

Internal Agency Use Only

FISMA Assessment

Caveats

Caveats:

- If there is significant turnover in the IT staff, DCRB faces risks
- Documentation is right now in the process of improving
- No penetration testing was performed during this engagement
 - A Penetration test was performed by a third party FireEye (Mandiant) in October 2016



Internal Agency Use Only

FISMA Assessment

Techniques



Security Controls Assessment Techniques

- Interview IT staff
- Examine documentation
- Test the system: collect artifacts and screenshots
- Vulnerability scans with specialized tools
- Test cases: NIST SP 800-53A Rev 4

Internal Agency Use Only

FISMA Assessment

Results: DMS



DMS Findings

- Vulnerabilities in WebLogic: can be patched
- Technical improvements
- Process improvements (pending)
- Documentation

Internal Agency Use Only

FISMA Assessment

Results: DMS



DMS Results

	HIGH	MODERATE	LOW	DOCUMENTATION ONLY	TOTAL
800-53 test cases	0	4	13	11	28
Vulnerabilities detected by scan	2	6	0	N/A for scanning;	8
Total:	2	10	13	11	36

Internal Agency Use Only

FISMA Assessment

Results: DMS details



Detailed Findings for DMS

- Need for patches and updates to WebLogic
- Account management: creation, disabling
- Best practice: multi-factor authentication
- 6 moderate vulnerabilities from scans
- Process improvements (pending)

Internal Agency Use Only

FISMA Assessment

Results: GSS



GSS: Some Findings

- Vulnerabilities discovered by scan
- Technical improvements
- Process improvements (pending)
- Documentation

Internal Agency Use Only

FISMA Assessment

Results: GSS



GSS Results

	HIGH	MODERATE	LOW	DOCUMENTATION ONLY	TOTAL
800-53 test cases	0	5	16	18	39
Vulnerabilities detected by scan	14	48	9	N/A for Scan: 0	71
Total:	14	53	25	18	110

Internal Agency Use Only

FISMA Assessment

Recent improvements



Recent Improvements:

- Two-factor authentication for administrators
- Database encryption
- Web Application scanning (Burp Suite)
- Automatic detection and notification of system changes

Internal Agency Use Only

FISMA Assessment

General Support System



PASS

Internal Agency Use Only

FISMA Assessment

Lessons Learned



Lessons learned - POSITIVE:

- Good IT team: capable, experienced, collaborative.
- New scanning: web app scanning, database scanning
- DMS network architecture is highly protective

Internal Agency Use Only

FISMA Assessment

Lessons Learned



Lessons learned:

opportunities for improvement

- Observation: Documentation in general is a low priority.
- Recommendation: Ensure that processes are documented and updated.

Internal Agency Use Only

FISMA Assessment

Recommendations



Recommendations:

- Patch WebLogic
- Other patches for DMS
- Integrate Active Directory to DMS
 - Support account lifecycle:
 - Account creation and de-activation
- Document certain processes, e.g. encryption

Internal Agency Use Only

FISMA Assessment

Conclusion



Thank you!



Internal Agency Use Only

Data Management System

Questions



Questions and Answers

Internal Agency Use Only



District of Columbia Retirement Board - 2017 Audit Committee Meeting

Insurance Program Review

Proprietary & Confidential

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Cyber Liability

Cyber Liability Insurance Summary - Current Program

Coverage	Insurance Co.	Policy No.	Effective Dates	Limits of Liability	Description	Policy Territory	Annual Premium
Cyber	AIG - Illinois National Insurance Co.	01-436-21-55	6/01/16-12/1/2017	Liability: \$3,000,000 Combined Policy Aggregate <i>Security & Privacy and Regulatory Action Sublimit of Liability</i> \$3,000,000 - Sublimit for each Security & Privacy and Regulatory Action \$50,000 - Retention/Waiting Period 6/1/15 - Retroactive Date For Security Failures & Privacy Events <i>Network Interruption Insurance</i> \$3,000,000 - Sublimit 12 Hrs. - Waiting Hours Period \$50,000 - Retention/Waiting Period N/A - Retroactive Date 6/1/15 - Continuity Date <i>Event Management Insurance</i> \$3,000,000 - Sublimit \$50,000 - Retention/Waiting Period N/A - Retroactive Date 6/1/15 - Continuity Date <i>Cyber Extortion Insurance</i> \$3,000,000 - Sublimit \$50,000 - Retention/Waiting Period N/A - Retroactive Date 6/1/15 - Continuity Date <i>Reputation Guard</i> \$50,000 - Sublimit 0% - Coinsurance N/A - Retroactive Date 6/1/15 - Continuity Date	Cyber Retention \$50,000	Worldwide	\$ 42,807

Cyber Liability - Coverage Summary - 1st Party

Breach Event Expenses

Triggered by discovery of a privacy incident

Reimbursement coverage for the insured's costs to respond to a data privacy or security incident. Policy triggers may vary but typically are based upon discovery of such an event, or a statutory obligation to notify consumers of such an event. Covered expenses can include computer forensics expenses, legal expenses, costs for a public relations firm and related advertising to restore your reputation, consumer notification, and consumer credit monitoring services.

First Party Coverage Parts

Triggered by a network security failure, unless system failure coverage provided

Business Interruption

Reimbursement coverage for the insured for actual lost net income caused by a network security failure, as well as associated extra expense. The greater of a dollar amount retention or waiting period retention of between 10 to 24 hours applies.

Dependent Business Interruption *Not Currently Covered

Reimbursement coverage for the insured for actual lost income caused by a network security failure of a business on which the insured is dependent, as well as associated extra expense. The greater of a dollar amount retention or waiting period retention of between 10 to 24 hours applies.

System Failure Business Interruption *Not Currently Covered

Expands coverage trigger for business interruption beyond computer network security failure to include any system failure.

Digital Asset Protection

Reimbursement coverage for the insured for costs incurred to restore, recollect, or recreate intangible, non-physical assets (software or data) that are corrupted, destroyed or deleted due to a network security failure.

Cyber Extortion

Triggered by a threat to cause a security failure or privacy breach

Reimbursement coverage for the insured for expenses incurred in the investigation of a threat and any extortion payments made to prevent or resolve the threat.

Cyber Liability - Coverage Summary - 3rd Party

Media Liability Coverage

Liability coverage for defense costs and damages suffered by others for content-based injuries such as libel, slander, defamation, copyright infringement, trademark infringement, or invasion of privacy. The scope of covered media is variable and can range from the insured's website only to all content in any medium.

Security Liability

Liability coverage for defense costs and damages suffered by others resulting from a failure of computer security, including liability caused by theft or disclosure of confidential information, unauthorized access, unauthorized use, denial of service attack or transmission of a computer virus.

Privacy Liability

Liability coverage for defense costs and damages suffered by others for any failure to protect personally identifiable or confidential third-party corporate information, whether or not due to a failure of network security. Coverage may include: unintentional violations of the insured's privacy policy, actions of rogue employees, and alleged wrongful collection of confidential information.

Regulatory Proceedings

Liability coverage for defense costs for proceedings brought by a governmental agency in connection with a failure to protect private information and/or a failure of network security. Coverage is typically sub-limited and includes coverage for fines and penalties to the extent insurable by law. Compensatory damages, i.e. amounts the insured is required by a regulator to deposit into a consumer redress fund, may be covered.

Payment Card Industry Data Security Standards (PCI-DSS) *Not Currently Covered

Coverage for a monetary assessment (including a contractual fine or penalty) from a Payment Card Association (e.g., MasterCard, Visa, American Express) or bank processing payment card transactions (i.e., an "Acquiring Bank") in connection with an Insured's non-compliance with PCI Data Security Standards.



Directors & Officers and Employment Practices Liability

D&O Liability Coverage

What Does D&O Insurance Do?

- ✓ *Helps protect the financial well-being of the company itself as well as the **personal assets** of its directors, officers*
- ✓ *Pays for a **legal defense***
- ✓ *Can help the company attract and retain qualified directors and officers*

Key D&O Policy Features

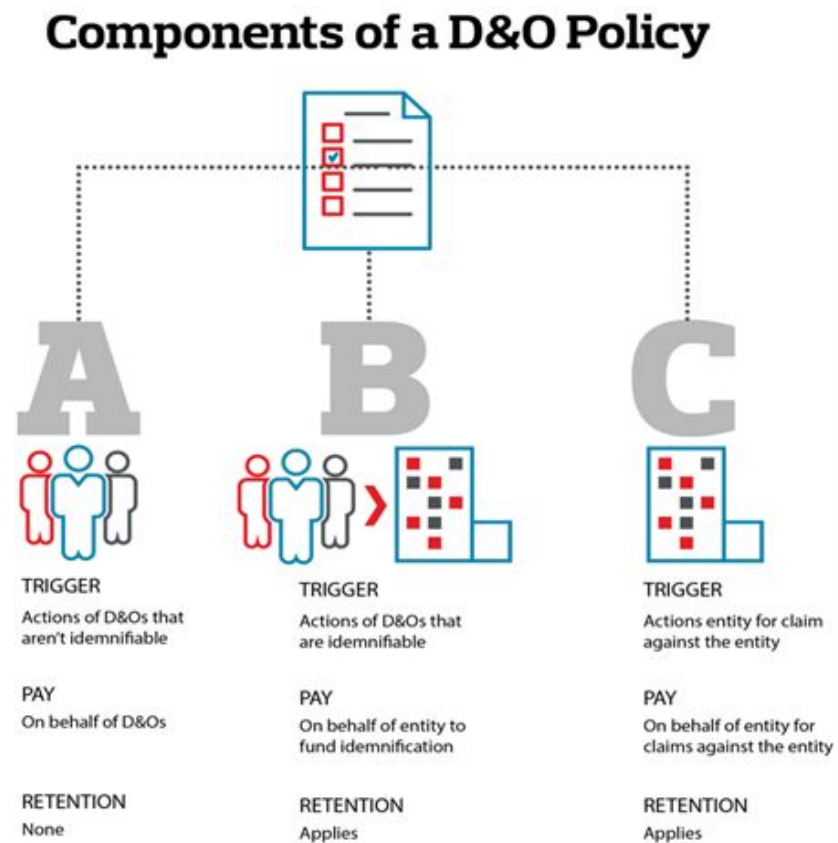
D&O lawsuits can threaten your company's balance sheet, as well as the personal assets of the company's directors and officers. Defense costs, judgements, and settlements, and damages awarded in suits against companies and/or their directors and officers can translate to millions of dollars in loss.

Claims Made & Reported Trigger – Coverage responds to claims that are both made against the Insured and reported to the Insurer during the same effective policy period, or extended reporting period if applicable.

Three Insuring Agreements – The three D&O insuring agreements are commonly referred to as Side A, Side B, and Side C of the policy.

- **Side A** – protects insured persons in the event the insured entity is unable to indemnify the individual(s) for covered loss
- **Side B** – reimburses the insured entity for covered loss amounts to the extent it indemnifies an insured person for such loss
- **Side C** – coverage for claims made against the entity

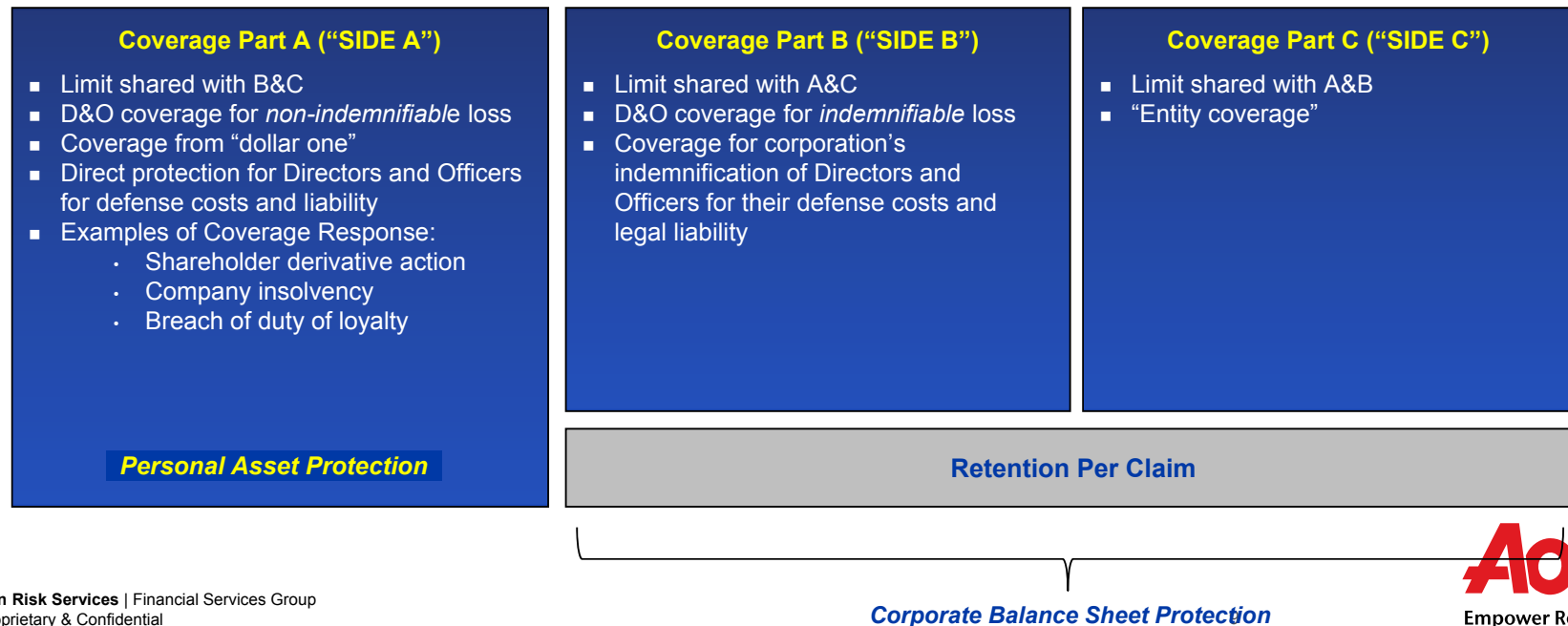
D&O Policy Structure



Basics of the D&O Contract

Overview

- **Insured Persons:** Directors and officers are covered for certain Wrongful Acts committed within their scope and capacity as directors and officers of their company.
- **Wrongful Acts:** any breach of duty, neglect, error, misstatement, misleading statement, omission or any matter claimed against an insured solely by reason of their status as directors and officers.
- **Settlement & Defense:** Defense costs, settlements and judgments are included in the limit, subject to the applicable retention.



Employment Practices Liability Coverage

What is Employment Practices Liability Insurance?

Covers Claims Made and Reported against the company or employees within the policy period for Employment Practices Wrongful Acts that occur before or during the policy period.

EPLI is designed to provide employers with insurance protection for claims by:

- ✓ Past/Present Employees
- ✓ Job Applicants
- ✓ Administrative Agencies (i.e., Equal Employment Opportunity Commission (EEOC))
- ✓ Third Parties (i.e., customers, clients, vendors (may be subject to additional premium))

Types of Claims:

The policy provides protection for the insured business, its directors, officers, and employees against a broad range of employment-related claims such as:

- ✓ wrongful dismissal, discharge, or termination of employment
- ✓ breach of any oral or written employment contract or quasi-employment contract
- ✓ misrepresentation
- ✓ violation of employment discrimination laws (including workplace harassment)
- ✓ wrongful failure to employ or promote
- ✓ wrongful deprivation of a career opportunity
- ✓ negligent evaluation
- ✓ invasion of privacy; defamation
- ✓ wrongful infliction of emotional distress.



Fiduciary Liability and Crime

Fiduciary Liability & Crime Insurance Summary - Current Program

Coverage	Insurance Co.	Policy No.	Effective Dates	Limits of Liability	Description	Policy Territory	Annual Premium
Fiduciary Liability (Labor Management and Trust)	Federal Insurance Co. (Chubb)	8237-5529	11/01/16 to 12/1/17	\$10,000,000 Each Loss \$10,000,000 Annual Aggregate Pending or Prior Date: 01/01/1986	Fiduciary Liability Insurance \$100,000 Each Claim Deductible	Worldwide	\$118,994
Crime	Travelers Casualty and Surety Company of America	105531480	12/01/16-17	\$1,000,000 Forgery or Alteration \$1,000,000 Computer Crime - Fraud \$1,000,000 Funds Transfer Fraud \$1,000,000 Employee Theft \$250,000 Social Engineering	Crime Insurance \$50,000 Single Loss Retention	Worldwide	\$3,116

Social Engineering Coverage - Crime

What is Social Engineering?

“Social Engineering” Fraud leverages human interaction to manipulate innocent employees to transfer funds or property to third party perpetrators. This action is referred to as “Social Engineering” Fraud because a perpetrator utilizes data found on social networking sites, such as LinkedIn, Facebook and company web sites, to identify and impersonate key company personnel.

Social Engineering Fraud Losses:

Vendor Impersonation (Most Common)

The typical vendor impersonation fraud involves vocal and email communications between a company’s accounts payable department and what appears to be a known, trusted vendor. The purported vendor advises the accounts payable department that they are switching banks and that all further payments should be directed to the new bank account. The purported vendor can take over email addresses and domain names of the legitimate vendor to facilitate this fraud.

Executive Impersonation (Most Severe)

An officer U.S. company’s Subsidiary in Europe receives an email from the CEO or CFO requesting a wire transfer to a bank in Asia to facilitate a secret acquisition. The local financial officer, after a string of emails and calls, is convinced she is dealing with the real CEO and complies with the wire request.

Commercial Crime Insurance & Social Engineering:

- Computer fraud coverage under the commercial crime policy wording is antiquated and differs from carrier to carrier. Policy language was drafted well before the everyday use of the Internet and underwriters generally contend that they only intend to cover a *hacking incident*.
- If a client cannot successfully demonstrate their system was hacked underwriters across the board will take the position that they do not provide “Duping” coverage.
- Some markets are willing to offer coverage for the exposure. The carriers that will provide coverage will carefully evaluate the exposure and are likely to only offer it on a sub-limited basis.

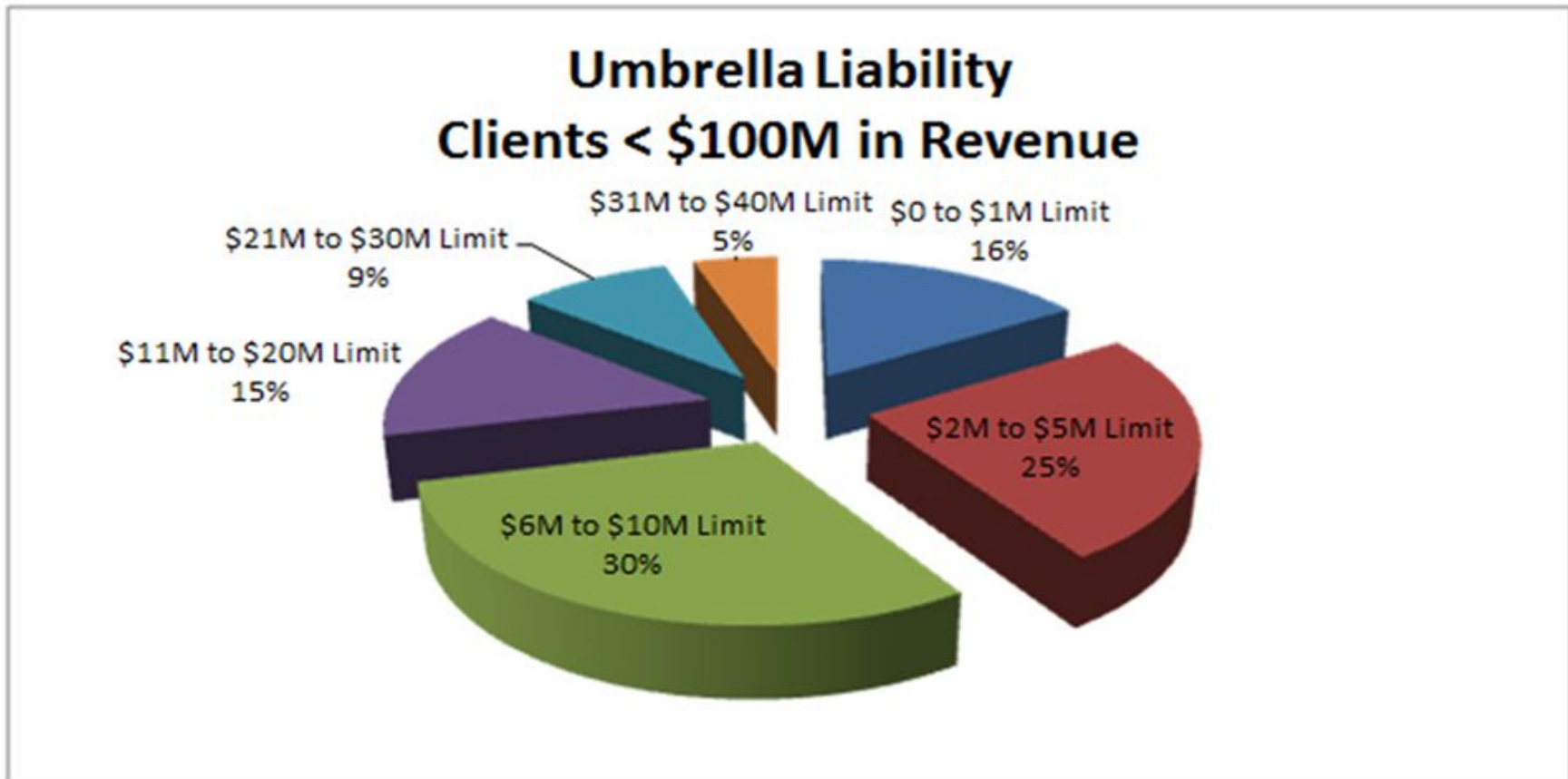


Property & Casualty

Property & Casualty Insurance Summary - Current Program

Coverage	Insurance Co.	Policy No.	Effective Dates	Limits of Liability	Description	Policy Territory	Annual Premium
Commercial Package	Hartford Casualty Insurance Company	42SBARS5235	10/01/16 - 12/1/17	Liability: \$1,000,000 Liability and Medical Expenses \$10,000 Medical Expenses - Any One Person \$1,000,000 Personal and Advertising Injury \$300,000 Damage to Premises Rented to You \$2,000,000 Aggregate Products and Completed Operations \$2,000,000 General Aggregate \$5,000 Employment Practices Liability - Each Claim and Aggregate Retroactive Date: 1/29/2001 Property: \$4,416,900 Business Personal Property - Replacement Cost \$10,000 Money and Securities - Inside the Premises \$5,000 Money and Securities - Outside the Premises \$50,000 Fungi, Bacteria or Virus 12 Months Actual Loss Sustained - Business Income and Extra Expense 30 Days - Civil Authority Mechanical Breakdown: \$50,000 Hazardous Substances \$50,000 Expediting Expenses \$15,000 Identity Recovery	\$250 Deductible (Property) except where otherwise specified; General Liability - No Deductible	US, US territories and possessions, Puerto Rico and Canada.	\$11,660

Umbrella Liability - Benchmarking



Per the above chart, most (71%) of our clients with reported revenue of less than \$100 million carry Umbrella Liability limits within the \$2 to \$10 million range. District of Columbia Retirement Board would fall at the lower end of this client range (\$1 to \$5 million).

Standard Insurance Program - Coverage Outlook

Coverage	What Does it Protect?	Deductible/ Retention	Everyday Application
Property Insurance	Covers direct damage claims arising from company-owned property, property of others, and property in the care, custody & control of your company. Written on a per occurrence basis w/ limits based on replacement cost/agreed value Note: earthquake & flood coverage optional	Yes	In the event that your property (e.g. building, office contents, third party property held on premises) is damaged due to a covered loss, the insurance co. will pay you based on replacement cost/agreed value
General Liability	Covers claims arising from third party liability for bodily injury, property damage, libel/slander/defamation, and personal injury arising from your premises operations, products, and completed operations	General Liability: Possible, but unlikely	This is often a premises-based exposure which responds to accidents involving a third party or to their property while at your location(s). Coverage also exists if a third party accuses your co. of libel, slander, and defamation
Employee Benefits Liability	Defends and pays claims arising from negligence in the administration of company benefits (e.g. healthcare, retirement)	Yes	Covers claims arising from an error in the administration of the employee benefits plans
Commercial Automobile	Covers claims arising from bodily injury/property damage liability, physical damage to company-owned/rented vehicles, and/or employee-owned vehicles during the course of business operations	Liability: Yes Prop Damage: No	In the event that an owned, rented, or employee-owned vehicle sustains damage during the course of work, this policy will pay for damage to the vehicle. It will also pay for the liability to third parties that may be involved
Workers' Comp (WC)	Consist of two parts. Part A covers bodily injury claims arising from work-related duties or conditions. Part B, (Employers Liability), covers claims brought against the employer by the employee or family when the Workers Compensation payout is deemed to be insufficient. WC coverage is mandatory	No	Operates on a no-fault basis and protects companies from lawsuits brought by injured employees or employees' family members
Umbrella/ Excess Liability	Generally covers claims for losses when the primary underlying policy limits have been exhausted. These policies are often broader than the primary underlying policy, and may require a deductible when coverage does not exist in the underlying policy	Depends on underlying program	Ensures coverage for severe losses that exhaust the primary limits (e.g. General Liability, Auto, Employers Liability). Also makes certain that any gaps in underlying policies are covered
Directors & Officers Liability	Covers claims arising from negligent acts of directors and officers. The policy contains two parts. Part A reimburses the company for payouts made on behalf of directors & officer's as required by state law or by company bylaws. Part B provides reimbursement coverage when the company defends the director/officer	Yes	Covers negligence suits against directors & officers coming from shareholders, competitors, employees, creditors, or government regulators
Employment Practices Liability	Defends and pays claims made by employees arising from negligent employment practices	Yes	Covers wrongful acts in the workplace (i.e. harassment, demotion, discrimination, coercion, wrongful termination, etc.) Note: can be included in directors & officers policy or written separately
Crime (ERISA Crime)	Covers employee theft of company money, securities, property of other employees and property of clients	Yes	In the event that an employee steals money, securities, or the property of others from your company, this coverage would respond even if the theft is discovered after the employee has left/terminated *This coverage assists an employer with ERISA compliance*
Professional/ Error & Omissions Liability	This coverage responds in the event of third-party financial loss caused by your company's professional services (errors in consulting, accounting, copyright work, etc.)	Yes	In the event that a customer sues you for financial loss due to your negligent consultation, advice or operations
Fiduciary Liability	Covers the liability of the person who acts as a fiduciary for their company's retirement plan. The US Employee Retirement Income Security Act (ERISA) imposes fiduciary responsibilities upon trustees for the administration of such plans	Yes	A fiduciary/trustee can be held personally liable for shortages in the retirement plan's assets resulting from a breach of fiduciary duty, such as improper investment of funds/negligence
Foreign Property & Liability Package	Includes: Property, General Liability, Voluntary Workers Compensation/Employers Responsibility, Contingent Auto (Optional: AD&D, Ocean Cargo, K&R, Medical Expenses)	Yes	This coverage is used in the event of employee travel/operations overseas. Coverage highlights include business personal property, liability for occurrences overseas where suits are brought overseas, Voluntary WC for work-related exposures that are generally not covered by US state/country of origin, Auto liability, Accidental Death & Dismemberment, Repatriation
Special Crime	Covers kidnap/ransom/extortion incidents on a worldwide basis. Also can provide payment to insured organization for consequential loss of earnings	No	Protects executives and employees traveling and in the course of business, especially when involving high-risk locations or situations (i.e. conducting layoffs etc.)
Inland Marine/Open Cargo	Covers goods while being transported by vessels crossing foreign/domestic waters. Includes inland/aviation transit associated with the shipment and damage to vessels as a result of shipping your goods	Yes	Vital for businesses w/ property in transit. Covers liability of bailees and liability of property owner for damage to vessels sustained in direct relation to the shipment of your goods

***DCRB is currently carrying the highlighted coverages**

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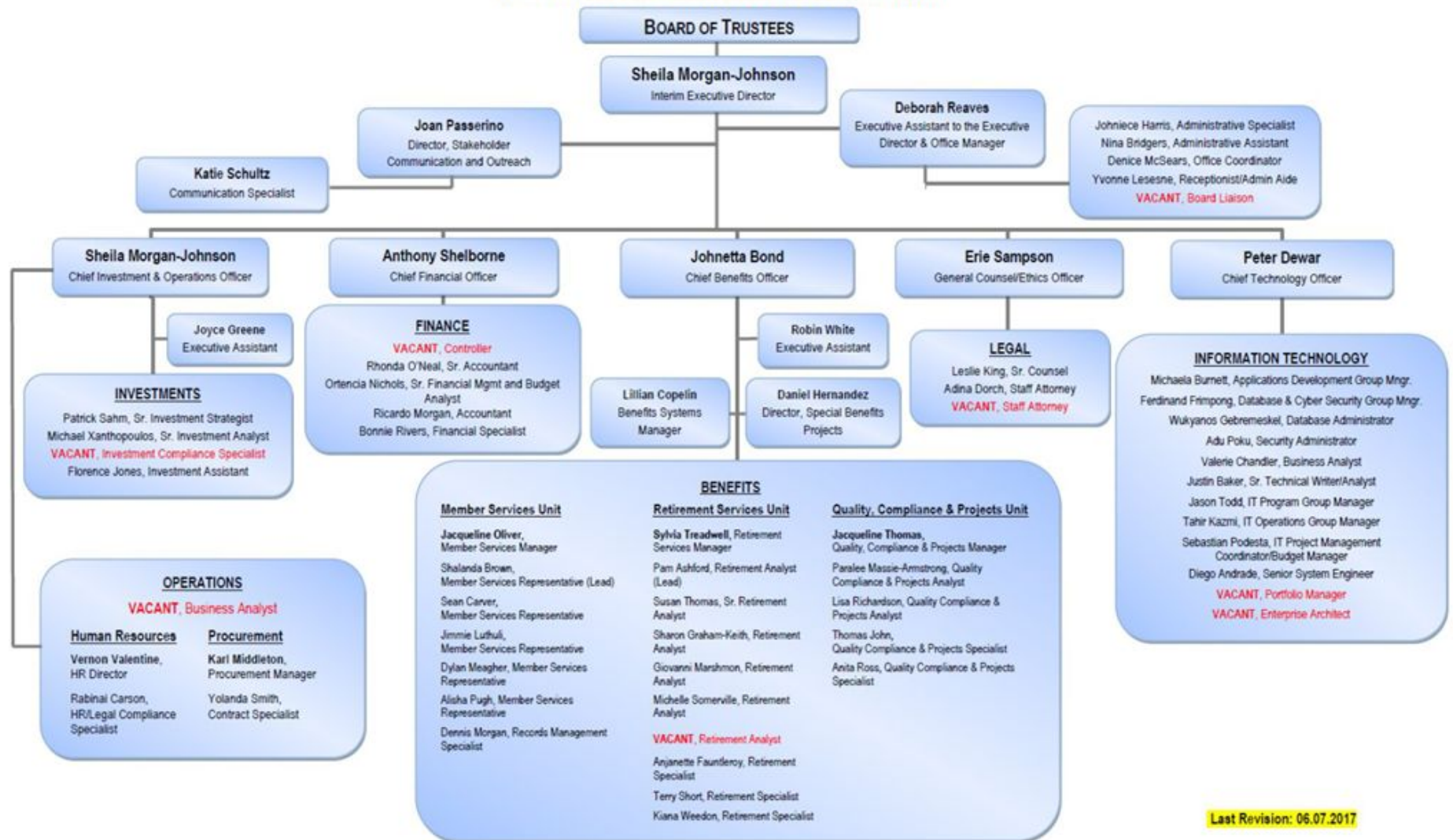
DISTRICT OF COLUMBIA RETIREMENT BOARD

MOTION:

**TO APPROVE CERTAIN SUBSTANTIVE AND TECHNICAL AMENDMENTS TO
THE DCRB AUDIT COMMITTEE CHARTER.**

PRESENTED TO THE BOARD ON JUNE 22, 2017

THE DISTRICT OF COLUMBIA RETIREMENT BOARD



Last Revision: 06.07.2017

Board Meeting - Additional Materials

DC Retirement Board Conference Listing as of June 22, 2017					
Sponsor	Name of Conference	Date	Location	Cost	Description
National Council on Teacher Retirement	NCTR 17th Annual Trustee Workshop	July 23-26, 2017	Cambridge, Massachusetts	Registration:\$2,165	Public fund trustees participate to gain a better understanding of the fiduciary's role and to network with peers from other state and local retirement systems. The program is developed by the NCTR Trustee Education Committee and enhanced by input from renowned academic partners.
National Association of State Retirement Administrators	NASRA Annual 63rd Conference	August 5-9, 2017	Baltimore, MD	Registration thru 06/30/2017 \$1,050 and after \$1,150	The conference features leaders in the fields of retirement plan investment and administration covering a variety of subjects including investment management, world events applicable to the pension industry, the economy, human resources, trends, and more.
National Conference on Public Employee Retirement Systems	2017 Public Pension Funding Forum	September 10-12, 2017	San Francisco, CA	Registration thru 08/18/2017 \$650 and after \$750	The Public Pension Funding Forum will examine the obstacles that stand in the way of closing public pension funding gap and explore new solutions to overcome such obstacles, including better risk management in economic cycles, use of new and improved debt instruments, and closing tax loopholes.
National Conference on Public Employee Retirement Systems	NCPERS 2017 Public Safety Employees Pension & Benefits Conference	October 1-4, 2017	San Antonio, TX	Early Bird Registration \$700	The Public Safety Employees Pension & Benefits Conference provides quality education that is specifically tailored for the unique needs and demands of public safety pensions. The conference has educated hundreds of public safety pension trustees, administrators and staff; union officials; and local elected officials by featuring presentations from recognized leaders in both the worlds of finance and politics, providing news on the latest developments, and offering attendees the opportunity to network with fellow trustees.
National Council on Teacher Retirement	NCTR 95th Annual Conference	October 6-11, 2017	Tucson, Arizona	Registration thru 09/10/2017 \$1,135 and after \$1,285	NCTR provides vital support for the retirement security for America's teachers. There are thousands of dedicated individuals involved in our mission, but with more pressure on retirement systems, the need is greater than ever for the leadership, support, and connections that NCTR provides for its members.
International Foundation of Employee Benefit Plans	IFEBP's Certificate of Achievement in Public Plan Policy (Part II)	October 21-22, 2017	Las Vegas, NV	Registration thru 09/10/2017 \$1,095	The course provides an understanding of the fundamental areas of public sector benefit plans by earning a Certificate of Achievement in Public Plan Policy (CAPPP). CAPPP addresses core concepts and current trends in legal, legislative, plan design and fiduciary aspects of public sector benefit plans.
International Foundation of Employee Benefit Plans	IFEBP's 63rd Annual Employee Benefits Conference	October 22-24, 2017	Las Vegas, NV	Registration thru 09/10/2017 \$1,525 and after \$1,825	Trustees, Administrators, and Fiduciaries supporting employee benefit plans will find relevant, objective information on the issues and topics impacting their role today. The annual conference will uncover effective solutions and useful tools you can use to prepare your plans for what may lie ahead.
National Conference on Public Employee Retirement Systems	NCPERS Legislative Conference	January 28-30, 2018	Washington, DC	Registration:\$400	NCPERS Legislative Conference for public fund trustees and plan administrators, highlights the issues on Capitol Hill and in federal regulatory agencies that affect pension funds today.

DISTRICT OF COLUMBIA RETIREMENT BOARD**Training & Travel Report****As of****June 22, 2017**

Name	Description	Sponsor/Vendor		Dates	
			Location	From	To
Trustees					
Mary Collins	Education	Mid Atlantic Plan Sponsors (MAPS) Annual Trustee Educational Conference	Baltimore, MD	06/07/17	06/09/17
Edward Smith	Education	National Conference on Public Employee Retirement Systems (NCPERS Annual Conference and Exhibition)	Hollywood, FL	05/20/17	05/24/17
Lenda Washington	Education	MAPS Conference	Baltimore, MD	06/07/17	06/09/17
Staff					
Peter Dewar	Conference	Gartner Security & Risk Management Summit 2017	National Harbor, MD	06/12/17	06/15/17
Sheila Morgan-Johnson	Conference	Carlyle Europe Real Estate Partners III L.P. G Square, Astirg, Epiris, Warick Capital and Pantheon Annual Investor Meeting	London, England	06/11/17	06/18/17
Patrick Sahn	Conference	Institutional Limited Partners Association Conference (ILPA)	Boston, MA	06/01/17	06/01/17
	Conference	Carlyle Europe Real Estate Partners III L.P. G Square, Astirg, Epiris, Warick Capital and Pantheon Annual Investor Meeting	London, England	06/11/17	06/18/17
Joan Passerino	Conference	International Foundation of Employee Benefit Plans (Washington Legislative Update)	Washington, DC	05/22/17	05/23/17
Jason Todd	Conference	Gartner Security & Risk Management Summit 2017	National Harbor, MD	06/12/17	06/15/17
Michael Xanthopoulos	Meeting	New Enterprise Associates Annual Meeting & Limited Partner Dinner 2017 (NEA)	McLean, VA	05/24/17	05/25/17