



Shelby County Government

LEE HARRIS
MAYOR

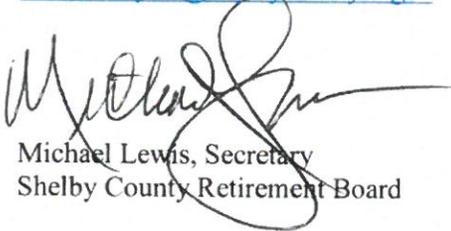
November 30, 2018

Shelby County Retirement Board
Board of Administration

Dear Board Member:

Mayor Lee Harris has scheduled the Shelby County Retirement Board meeting for **Tuesday, December 4, 2018 at 10:00 a.m.; in the 5th floor conference room #1**, of the Vasco A. Smith County Administration Building, 160 North Main, Memphis, TN 38103.

If you are unable to attend, please notify the Retirement Office at 901-222-1950 or email Nicole.Taylor@shelbycountyttn.gov.



Michael Lewis, Secretary
Shelby County Retirement Board

BOARD OF ADMINISTRATION

160 North Main, 5th Floor Conference Room 1

Tuesday, December 4, 2018 @ 10:00 A.M.

1. **REQUEST:** **Approval – October 2, 2018 Minutes (p. 1-8)**

2. **REQUEST:** **Approval - New Members into Retirement System (p. 9-10)**

3. **REQUEST:** **Approval - Refunds/Cash Outs (p. 11)**

4. **REQUEST:** **Approval - Service and Early Retirements (p. 12)**

5. **REQUEST:** **Approval - Survivors' Benefits (p. 13)**

6. **DISCUSSION:** **Investment Report - Wanda Richards**

7. **REQUEST:** **Approval - Annual Valuation of the Shelby County Government Retirement System - Ed Koebel**

Adjournment

The regularly scheduled meeting of the Board of Administration of the Retirement System of Shelby County was held on Tuesday, November 6, 2018 at 160 N. Main St. Memphis, TN 38103.

The members present were Patrice Thomas, Wanda Richards, Commissioner Eddie Jones, Commissioner Van Turner, Brittany Rowe, Jim Martin, Richard Swiggart, Tracie Montgomery and Debra Gates.

The members absent were Mayor Lee Harris, Frank Allen and Reginald Manning.

Also present were Quran Folsom, Patty Coker, Mike Lewis, Nicole Taylor, Roger Henderson, Brenda Greene, LaSonya Hall, Marlinee Iverson, Danielle Inez, Cary Miller, Rob Appling, James Stokes, and John Lewis.

1. REQUEST: APPROVAL OF OCTOBER 2, 2018 MINUTES

Jim Martin made the motion to approve the October 2, 2018 minutes.

Seconded: Richard Swiggart

Vote: Unanimous

2. REQUEST: APPROVAL OF NEW MEMBERS INTO RETIREMENT SYSTEM

A list of new employees becoming members of the Shelby County Retirement System was submitted for approval. As of October 31, 2018 active employees in Plan B are 3, in Plan A are 1,202, in Plan C are 1,808, and in Plan D are 1,958. As of October 31, 2018, there were 894 retirees in Plan B, 2,010 in Plan A and 1,073 in Plan C for a total of 3,977 retirees. Total retiree payroll for October 31, 2018 was \$8,217,925.64.

NEW EMPLOYEES OCTOBER 2018

<u>NAME</u>	<u>DEPARTMENT</u>	<u>PRIOR SERVICE</u>	<u>MONTHLY SALARY & POSITION</u>
<u>ADMINISTRATION</u>			
LaSonya H. Hall	CAO	None	\$11,666.66 Monthly - Deputy CAO & HR Director
Donna L. Ashford	Health Services	None	\$3,932.50 Monthly - Public Health Nurse
TerriAnn M. Wright	Health Services	None	\$2,882.08 Monthly - Medical Laboratory Technician
Tamika L. Moncrief	Human Resources	None	\$4,125.00 Monthly - Compensation Advisor
Wendy U. Thomas	Internal Audit	Yes	\$9,583.34 Monthly - Chief Auditor
Osborne D. Burks III	Mayor's Office	None	\$5,686.00 Monthly - Spec. Asst. Mayor-Legislative Affairs
Donna K. Ball	Parks and Grounds	Yes	\$2,742.26 Monthly - Clerical Specialist
Angela A. Hill	Parks and Grounds	None	\$7,083.34 Monthly - Administrator
Steven W. Denson	Roads and Bridges	None	\$2,599.80 Monthly - Laborer
<u>ELECTED OFFICIALS</u>			
Mildred Davis	Assessor's Office	Yes	\$7,250.00 Monthly - Manager A
Shauntiska E. Franklin	Assessor's Office	None	\$5,541.66 Monthly - Community Outreach Coordinator
Shirley J. Phillips	Assessor's Office	None	\$6,250.00 Monthly - Administrative Assistant
Ioshua B. Jacobs	Attorney General's Office	None	\$2,636.40 Monthly - Legal Investigator
Brian T. Jones	Attorney General's Office	None	\$4,166.66 Monthly - Criminal Investigator
Nzinga A. Wash-Knight	G.S. Civil Court Clerk	None	\$2,510.62 Monthly - Deputy Court Clerk
Chloe L. Collins	G.S. Criminal Court Clerk	None	\$2,510.62 Monthly - Deputy Court Clerk
Ruth A. Nelson	G.S. Criminal Court Clerk	None	\$2,559.36 Monthly - Deputy Court Clerk
Alycia C. Chism	Juvenile Court	None	\$10,474.30 Monthly - Magistrate

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Marini K. Clay	Juvenile Court	Yes	\$3,228.18 Monthly - Juvenile Services Spec II
Lauren A. Denton	Sheriff's Office	None	\$2,437.50 Monthly - Jail Processing Assistant
Jessica N. Parker	Sheriff's Office	None	\$2,437.50 Monthly - Jail Processing Assistant
Jlанда L. Reed	Sheriff's Office	Yes	\$2,437.50 Monthly - Jail Processing Assistant
Aubrey J. Howard	Trustee's Office	None	\$7,583.34 Monthly - Legislative Liaison
Rachel H. Newman	Trustee's Office	None	\$6,666.66 Monthly - Administrative Assistant

ENTERPRISE FUND

Jlandis S. Addison	Corrections Center	None	\$3,010.64 Monthly - Correctional Officer
Derrick O. Berry	Corrections Center	None	\$3,010.64 Monthly - Correctional Officer
Cortez M. Blair	Corrections Center	None	\$3,010.64 Monthly - Correctional Officer
Bria M. Bowles	Corrections Center	None	\$3,487.88 Monthly - Corrections Programs Spec I
James D. Boyd	Corrections Center	None	\$3,010.64 Monthly - Correctional Officer
Latoya L. Burton-Gross	Corrections Center	None	\$3,010.64 Monthly - Correctional Officer
Georgia D. Cast	Corrections Center	None	\$3,010.64 Monthly - Correctional Officer
Harold B. Collins	Corrections Center	Yes	\$7,844.00 Monthly - Administrator
Kemmons J. Curry	Corrections Center	None	\$3,010.64 Monthly - Correctional Officer
Ianay K. Denton	Corrections Center	None	\$3,010.64 Monthly - Correctional Officer
Rameshia J. Gaters	Corrections Center	None	\$3,010.64 Monthly - Correctional Officer
Sheree L. Hood	Corrections Center	None	\$3,010.64 Monthly - Correctional Officer
Deanna V. Jeffries	Corrections Center	None	\$3,010.64 Monthly - Correctional Officer
Kara S. Johnson	Corrections Center	None	\$3,010.64 Monthly - Correctional Officer
Kanajah R. Jones	Corrections Center	None	\$3,010.64 Monthly - Correctional Officer
Jeremy W. Jordan	Corrections Center	None	\$3,010.64 Monthly - Correctional Officer
Canviss C. Leflore	Corrections Center	None	\$3,487.88 Monthly - Corrections Programs Spec I
Amanda K. Lesley	Corrections Center	Yes	\$3,010.64 Monthly - Correctional Officer
Blake D. McCormick	Corrections Center	None	\$3,010.64 Monthly - Correctional Officer
Jennifer L. Merritt	Corrections Center	None	\$3,010.64 Monthly - Correctional Officer
Derrick D. Mosley	Corrections Center	None	\$3,010.64 Monthly - Correctional Officer
Iakeria D. Moss	Corrections Center	None	\$3,010.64 Monthly - Correctional Officer
Cynita D. Mott	Corrections Center	None	\$3,487.88 Monthly - Corrections Programs Spec I
Sidi Y. Noor	Corrections Center	None	\$3,487.88 Monthly - Corrections Programs Spec I
Alisa M. Owens	Corrections Center	None	\$3,010.64 Monthly - Correctional Officer
Landers T. Philmore	Corrections Center	None	\$3,010.64 Monthly - Correctional Officer
Jessica D. Porter	Corrections Center	None	\$3,010.64 Monthly - Correctional Officer
Benito L. Ruiz	Corrections Center	None	\$3,010.64 Monthly - Correctional Officer
Kimberly S. Scott	Corrections Center	None	\$3,005.50 Monthly - Correctional Officer
Milton T. Sledge	Corrections Center	None	\$3,010.64 Monthly - Correctional Officer
Phaddeus D. Smith	Corrections Center	None	\$3,010.64 Monthly - Correctional Officer
Jaquae E. Thomas	Corrections Center	None	\$3,010.64 Monthly - Correctional Officer
Nathaniel D. Tillman	Corrections Center	None	\$2,500.00 Monthly - Stockroom Worker
Vicki L. Wilborn	Corrections Center	None	\$3,487.88 Monthly - Corrections Programs Spec I

GRANT FUND

Brea J. Watson	Corrections Center	None	\$2,986.84 Monthly - Corrections Programs Spec I
Cornelia M. Bobo	Health Services	None	\$4,062.50 Monthly - Public Health Nurse
Freena W. Jackson	Health Services	None	\$6,500.00 Monthly - Nurse Practitioner A

Elbone' C. Malone	Health Services	None	\$3,805.42 Monthly - Public Health Coordinator
LaTanya S. Hood	Sheriff's Office	None	\$2,437.50 Monthly - Clerical Specialist
Reginald D. Alexander	WIN	None	\$4,342.22 Monthly - Business Development Analyst
Destiny A. Cash	WIN	None	\$3,500.00 Monthly - Data Analyst
Fred R. Demagistris	WIN	None	\$4,442.30 Monthly - Business Development Analyst
Jakayla L. Dickson	WIN	None	\$3,366.66 Monthly - Workforce Development Specialist
Rolanda B. Eatmon	WIN	None	\$5,833.32 Monthly - Manager A
Georgetta E. Forest	WIN	None	\$4,083.34 Monthly - Accountant C
Phyllis Garrison-Brunson	WIN	None	\$4,486.72 Monthly - Business Development Analyst
Arthur L. Graham	WIN	None	\$3,451.34 Monthly - Workforce Development Specialist
Antoine D. Holley	WIN	None	\$3,764.56 Monthly - Workforce Development Specialist
Eugene Horton	WIN	None	\$7,878.30 Monthly - Systems Administrator III
Chauntay C. Jones	WIN	None	\$6,017.90 Monthly - Manager A
Kelly M. Lee	WIN	Yes	\$3,500.00 Monthly - Data Analyst
Henry E. Lewis	WIN	None	\$10,678.66 Monthly - Executive Director
Rondalyn N. Martin	WIN	None	\$3,500.00 Monthly - Data Analyst
Kimberly M. McManis	WIN	None	\$4,333.34 Monthly - Public Relations Specialist
Lora Y. Mendezu	WIN	None	\$4,342.22 Monthly - Training Coordinator
Randi L. Owen	WIN	None	\$7,575.00 Monthly - Deputy Administrator-Fiscal
Mary D. Pennington	WIN	None	\$4,486.72 Monthly - Business Development Analyst
Lori A. Ross	WIN	None	\$3,764.56 Monthly - Workforce Development Specialist
Ernestine Smith	WIN	None	\$4,544.50 Monthly - Executive Assistant-WIN
Rickey Smith	WIN	None	\$4,074.84 Monthly - Office System Technician
Stasha R. Taylor	WIN	Yes	\$3,500.00 Monthly - Data Analyst
Amanda N. Vincent	WIN	None	\$2,654.00 Monthly - Administrative Technician
Roderick F. Woody	WIN	None	\$5,833.32 Monthly - Manager A
Raissa J. Wright	WIN	None	\$4,486.72 Monthly - Human Resources Coordinator

TOTAL COUNT: 88
AVERAGE AGE : 39.62

Michael Lewis
Administrator of Human
Resources

I certify that the attached list of new employees are eligible
to participate
in the Shelby County Retirement System.

Richard Swiggart made the motion to accept New Members into the Shelby County Retirement System.
Seconded: Quran Folsom
Vote: Unanimous

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3. REQUEST: APPROVAL OF REFUNDS/CASH OUTS
 NOVEMBER 2018 REFUNDS, CASH OUTS & ROLLOVERS

EMPLOYEE NO.	NAME	TYPE OF BENEFIT	PLAN	AMOUNT
REFUNDS				
18515	KENISHA BURKS	REFUND	D	\$ 10,077.43
22371	ADAM CHOMYK	REFUND	D	573.05
19620	DONNELL COBBINS	REFUND	D	20,419.21
19030	JAMIE DILTZ	REFUND	D-SAFETY	20,861.73
20534	BAYLIS EARLE FARRELL III	REFUND	D	17,199.27
19965	JESSICA GAVROCK	REFUND	D	7,908.76
20900	DEMETRIC HAMPTON	REFUND	D	5,581.45
11807	ROBERT HUDSON	REFUND	A-SAFETY	6,655.27
20172	YOLANDA KIGHT	REFUND	D	25,866.28
22139	SHARON LEWIS	REFUND	D	282.47
20320	DARRON MACLIN	REFUND	D-SAFETY	4,106.38
16021	JAIRO MENDEZ	REFUND	D	10,579.43
18697	CANTRELLE MCMOORE	REFUND	D-SAFETY	24,340.44
22397	MONCHERIE MUSE	REFUND	D	690.66
21733	KENNETH OSBBORNE	REFUND	D	6,338.86
20823	ALEXANDRA PAPPAS	REFUND	D	12,443.40
19978	JASMINE RAY	REFUND	D	580.15
21105	PARKER SHERWOOD	REFUND	D	3,026.07
22083	KASHUNDRA WADE	REFUND	D-SAFETY	1,160.50
	TOTAL REFUNDS			\$ 178,690.81
CASH OUTS				
10443	WILLIE WALTON	REFUND	C	\$ 34,743.61
	TOTAL CASH OUTS			\$ 34,743.61
ROLLOVERS				
20153	TRACEY DAVIS	ROLLOVER	D	\$ 8,412.65
	TOTAL ROLLOVERS			\$ 8,412.65
	GRAND TOTAL REFUNDS, CASH OUTS & ROLLOVERS			\$ 221,847.07

Refunds are due to participants who are not vested in the pension system.

Cash Outs are due to participants who are vested but not yet eligible for retirement, or their monthly benefit is under \$200.

Amounts are processed as follows:

Less than \$30,000
 \$30,000 to \$50,000
 \$50,000 and over

Mandatory Cash Out/Rollover
 Optional Cash Out/Rollover
 Deferred Benefit

(Not eligible for retirement until age 55 - 65)

*ASTERISK DENOTES ANOTHER BENEFIT DUE CURRENTLY OR IN THE FUTURE

Richard Swiggart made the motion to approve Refunds and Cash Outs.
 Seconded: Quran Folsom
 Vote: Unanimous

4. REQUEST: SERVICE AND EARLY RETIREMENTS

NOVEMBER 2018 SERVICE AND EARLY RETIREMENTS

NAME	DEPARTMENT	YEARS OF SERVICE	AGE	ESTIMATED MONTHLY BENEFIT	PLAN	PENSION TYPE	BENEFICIARY	ESTIMATED MONTHLY BENEFIT AT DEATH
TOMMY W. CATES	INTERNAL AUDIT	32.21	63.17	\$7,063.21	A	EARLY	SINGLE	
WESLEY H. CRUMP	SHERIFF'S OFFICE	25.25	48.26	\$2,883.67	C	SERVICE	STEPHANIE CRUMP	\$2,162.75
WILLIAM M. DUNAVANT	FINANCE	31.91	62.46	\$5,200.68	C	SERVICE	DEBRA DUNAVANT	\$3,900.51
GARY R. HARSHMAN	PROBATE COURT	15.95	60.41	\$1,551.56	A	EARLY	CAROL HARSHMAN	\$1,163.67
STEPHEN L. HOLLEY	SHERIFF'S OFFICE	33.56	61.72	\$3,632.55	C	SERVICE	DENISER HOLLEY	\$2,724.41
DALE A. LANE	CAO/OFFICE OF PREPAREDNESS	29.82	52.75	\$7,114.95	C	SERVICE	KAREN LANE	\$5,336.21
RAYMOND P. PIPKIN	FINANCE	15.00	77.80	\$2,388.55	A	SERVICE	IMA PIPKIN	\$1,791.41
NANCY P. ROLL	JUVENILE COURT	28.12	53.73	\$3,472.16	C	SERVICE	ROBERT ROLL	\$2,604.12
LAURA A. SANDERS	SHERIFF'S OFFICE	30.12	56.57	\$2,481.24	C	SERVICE	SINGLE	
CHERYL A. FOWLER	HEALTH DEPARTMENT	25.00	66.63	\$1,704.83	A	SERVICE	SINGLE	

	NOVEMBER 2018 MONTH TO DATE	2019 FISCAL YEAR TO DATE						
AVERAGE YOS AT RETIREMENT	26.69	25.64						
AVERAGE AGE AT RETIREMENT	60.35	62.32						
AVERAGE PENSION BENEFIT	\$3,749.34	\$3,347.19						

Richard Swiggart made the motion to approve Service and Early Retirements.
 Seconded: Tracie Montgomery
 Vote: Unanimous

5. REQUEST: APPROVAL OF SURVIVORS' BENEFITS

NOVEMBER 2018 SURVIVORS' BENEFITS								
MEMBER STATUS	NAME	DEPARTMENT	PENSION PLAN	DATE OF DEATH	YEARS OF SERVICE	SURVIVOR	DATE OF BENEFIT	ESTIMATED MONTHLY BENEFIT
RETIRED	FREDERICK R. LOWE	CRIMINAL COURT	B	10/5/2018	26.27	AURELIA LOWE	10/6/2018	\$1,881.25

Jim Martin made the motion to approve Survivors' Benefits.
 Seconded: Richard Swiggart
 Vote: Unanimous

6. REQUEST: APPROVAL OF OPTIONAL CASH DISTRIBUTION

NOVEMBER 2018 OPTIONAL CASH DISTRIBUTION						
NAME	DEPARTMENT	YEARS OF SERVICE	AGE	PENSION PLAN	SERVICE TYPE	
ROBERT E. HILL	TRUSTEE'S OFFICE	7.95	65	C	DEFERRED VESTED	
OPTIONAL CASH DISTRIBUTION AMOUNT				\$50,000.00		
ESTIMATED MONTHLY PENSION AFTER CASH DISTRIBUTION				\$1,027.63		
Participant chose an Optional Cash Distribution amount which lowered the deferred monthly benefit.						
NAME	DEPARTMENT	YEARS OF SERVICE	AGE	PENSION PLAN	SERVICE TYPE	

JASON T. ZERWEKH	HEALTH SERVICES	11.55	65	C	DEFERRED VESTED
OPTIONAL CASH DISTRIBUTION AMOUNT			\$40,000.00		
ESTIMATED MONTHLY PENSION AFTER CASH DISTRIBUTION			\$1,971.35		
Participant chose an Optional Cash Distribution amount which lowered the deferred monthly benefit.					

Richard Swiggart made the motion to approve Optional Cash Distribution.

Seconded: Tracie Montgomery

Vote: Unanimous

7. **DISCUSSION: INVESTMENT REPORT – WANDA RICHARDS**

**SHELBY COUNTY RETIREMENT SYSTEM
INVESTMENT REPORT TO THE BOARD**

November 6, 2018

I. Market Value of Assets as of September 30, 2018: \$1,216,409,000

II. Performance Evaluation:

FUND TYPE	% of Portfolio	MONTH		FISCAL YTD		12 MONTHS	
		Shelby	Index	Shelby	Index	Shelby	Index
Domestic Equity	30.4%	0.32%	0.16%	7.14%	7.27%	17.78%	17.60%
Fixed Income	20.9%	-0.15%	-0.86%	-0.79%	-0.92%	-2.34%	-1.32%
International Equity	16.4%	0.33%	0.46%	-0.35%	0.71%	2.88%	1.76%
Alternative Investments	11.7%	0.75%	-0.02%	1.59%	0.44%	5.36%	3.25%
Master Limited Partnerships	8.1%	-2.37%	-1.57%	3.47%	6.57%	4.38%	4.89%
Low Volatility Equity	4.7%	1.24%	1.06%	5.25%	5.77%	5.25%	10.46%
Private Equity IRR	3.6%					-1.16%	
Private Real Assets	1.5%	0.00%	0.68%	-2.27%	1.72%	0.16%	1.80%
Operating Cash	2.8%	0.15%	0.15%	0.49%	0.49%	1.58%	1.58%
TOTAL	100.0%	0.06%	0.16%	2.45%	3.02%	6.59%	6.06%

III. Investment Report for the month ended September 30, 2018

In the major investment categories, small gains were reported in September for the domestic equity portfolio (.32%), international equities (.33%) and alternative investments (.75%). These funds are outperforming the market on a 12-month basis. The fixed income fund and master limited partnerships posted declines of -.15% and -2.37%, respectively. The total fund has gained .06% for the month, 2.45% for fiscal YTD, and 6.59% for the 12-month period. After paying monthly benefits and expenses, the fund increased by \$1.4 million to \$1,216,409,000.

IV. Domestic Equity: (30.4% of total portfolio)

Performance of the domestic equity managers was close to or better than the benchmarks for all reporting periods. A small gain of .32% was reported for the month, with larger gains of 7.14% for the fiscal YTD and 17.78% for 12 months - compared to index results of 7.27% and 17.6%, respectively.

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V. Fixed Income: (20.9% of total portfolio)

The fixed income managers posted losses across all reporting periods at September 30, although Shelby was less unfavorable than market for the month and fiscal YTD periods. For the 12-month period, our performance compared unfavorably with a -2.34% decline compared to the index of -1.32%.

VI. International Equity: (16.4% of total portfolio)

Our international equity managers' performance tracked closely with the market for the month at .33% compared to .46%. For the fiscal YTD period, the managers underperformed the market with a decline of -.35% compared to the benchmark increase of 0.71%. However, results compare favorably to the market on a 12-month basis at 2.88% compared to 1.76%.

VII. Alternative Strategies: (11.7% of total portfolio)

The hedge-fund group outperformed the composite for all reporting periods in September, with a fiscal YTD increase of 1.59% versus the index of .44% and a 12 month gain of 5.36% compared to 3.25%.

VIII. Master Limited Partnerships (MLP): (8.1% of total portfolio)

The MLP managers as a group underperformed the market in September with a decrease of -2.37% compared to the benchmark decline for the month of -1.57%. The unfavorable margin is larger for the YTD fiscal year period at 3.47% compared to 6.57%, although results for the 12-month period results are more closely aligned to market at 4.38% for Shelby compared to the 4.89% index.

IX. Private Equity Markets Portfolio:

Our private markets portfolio is made up of private equity, timberland and infrastructure investments. The value of this portfolio has earned a negative 1.16% internal rate of return since inception.

X. Total Fund Policy Index:

The Total Fund Policy Index represents the weighted average performance of each manager's benchmark and is compared to the total performance of the entire portfolio. The total fund increased by slightly less than the index for September at 0.06% versus .16% and for the fiscal YTD at 2.45% versus 3.02%. However, for the one-year period the managers have outperformed the market by earning 6.59% compared to the 6.06% index.

Report Accepted – No Vote Required

8. DISCUSSION: WILSHIRE REPORT – ROB APPLING

Rob Appling, Managing Director at Wilshire Associates, further discussed the current market levels that were discussed in the Investment Report, given by Retirement Board member Wanda Richards. In addition, Mr. Appling answered the Retirement Board members' questions regarding local money manager participation.

There being no additional business to come before the Board, the meeting was adjourned.

Jim Martin made the motion for the meeting to be adjourned.

Seconded: Richard Swiggart

Vote: Unanimous

Lee Harris, Mayor
Chairman

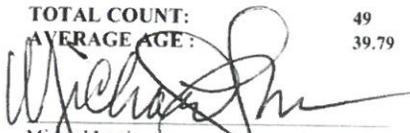
Michael Lewis
Secretary

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NEW EMPLOYEES NOVEMBER 2018

<u>NAME</u>	<u>DEPARTMENT</u>	<u>PRIOR SERVICE</u>	<u>MONTHLY SALARY & POSITION</u>
ADMINISTRATION			
Lauren L. Giovannetti	CAO	None	\$5,000.00 Monthly - Public Affairs Officer
Jessica L. Indingaro	CAO	Yes	\$5,362.00 Monthly - Attorney
Christopher Crum	Codes Enforcement	None	\$4,589.18 Monthly - Mechanical Inspector
Mandana Hooshyar	Codes Enforcement	None	\$4,589.16 Monthly - Plans Examiner
Kimela W. Cox	Community Services	None	\$7,083.32 Monthly - Interim Administrator
Janet Y. Lo	Community Services	None	\$4,916.66 Monthly - Coord Clinical & Strat Partner
Thomas E. Williams	County Attorney	Yes	\$7,336.82 Monthly - Supervisor, Attorney
Gregory Cobbige	Finance Department	Yes	\$7,893.00 Monthly - Controller-Finance
Barbara J. Baker	Health Services	None	\$2,851.12 Monthly - Truck Driver I
Gregory A. Chrislip	Health Services	None	\$3,131.82 Monthly - Environmentalist
Melody J. Evans	Health Services	None	\$4,872.32 Monthly - Program Eval-Clinical Serv Spe
Sequoia L. Gray	Health Services	None	\$2,437.50 Monthly - Clerical Specialist
John A. Ujwok	Health Services	None	\$3,287.32 Monthly - Public Health Data Analyst
Amesha N. Williams	Health Services	None	\$3,948.76 Monthly - Public Health Nurse
Tina A. Robinson	Human Resources	None	\$3,287.34 Monthly - Retirement Specialist
Latonya C. Wilson	Human Resources	None	\$2,853.42 Monthly - Human Resources Specialist
Sarada Mantha	Information Technology	None	\$4,708.32 Monthly - Programmer Analyst II
Luis M. Mercado	Information Technology	None	\$4,398.34 Monthly - Systems Technician II
Latorya E. Parker	Information Technology	None	\$3,698.24 Monthly - Customer Support Technician
Brenda H. Jones	Mayor's Office	None	\$10,333.32 Monthly - Director Office Preparedness
Nidia T. Logan-Robinson	OPD	None	\$9,373.84 Monthly - Deputy Division Director
David G. Durant	Parks & Grounds	None	\$2,599.98 Monthly - Landscape Maintenance Foreman
Kari A. Nelson	Pretrial Services	None	\$2,636.42 Monthly - Counselor B
Jamal A. Whitlow	Pretrial Services	Yes	\$4,872.32 Monthly - Manager A
Lucinda E. Grant	Support Services	None	\$2,599.80 Monthly - Custodial Worker
Felisa R. Jones	Support Services	None	\$2,986.82 Monthly - Support Services Specialist
Valeria C. Joyner	Support Services	None	\$2,599.80 Monthly - Custodial Worker
Amanda L. Peel	Support Services	None	\$2,599.80 Monthly - Custodial Worker
ELECTED OFFICIALS			
Forrest M. Edwards	Attorney General's Office	None	\$5,225.60 Monthly - Assistant District Attorney
Katie L. Farley	Attorney General's Office	None	\$5,225.60 Monthly - Assistant District Attorney
Danielle B. Mansfield	Attorney General's Office	None	\$2,916.66 Monthly - Digital Evidence Analyst
Elizabeth B. Stagich	Chancery Court	None	\$3,434.60 Monthly - Judicial Clerk-EO
Martez D. Higgins	Circuit Court Clerk's Office	None	\$2,437.50 Monthly - Deputy Court Clerk
Tenesha M. McNeil	Circuit Court Clerk's Office	None	\$2,437.50 Monthly - Collections Counselor Debtor
April S. Morris	County Clerk's Office	None	\$2,363.40 Monthly - Customer Service Rep II
Yollander Hardaway	Divorce Referee	None	\$3,991.74 Monthly - Attorney P/T Salary
Melanie E. Taylor Jefferson	Divorce Referee	None	\$3,051.16 Monthly - Attorney P/T Salary
Taylor M. Eskridge	G.S. Criminal Court	None	\$9,870.82 Monthly - Judicial Commissioner
Rikolle A. Beason	Sheriff's Office	None	\$2,437.50 Monthly - Jail Processing Assistant
Madison R. Burt	Sheriff's Office	None	\$2,437.50 Monthly - Jail Processing Assistant
Felicia S. Cochran	Sheriff's Office	None	\$2,437.50 Monthly - Jail Processing Assistant
LaKesha D. Gathing	Sheriff's Office	None	\$2,437.50 Monthly - Jail Processing Assistant
Mirault M. Hulon	Sheriff's Office	Yes	\$6,500.00 Monthly - Public Affairs Specialist
Davina C. Jones	Sheriff's Office	None	\$5,833.32 Monthly - Spec Asst Community Affairs
Jessica Z. Mosby	Sheriff's Office	None	\$2,437.50 Monthly - Jail Processing Assistant
Erica L. Washington	Sheriff's Office	None	\$2,437.50 Monthly - Jail Processing Assistant
GRANT FUND			
Kalya Hanover	Community Services	None	\$6,750.00 Monthly - Deputy Administrator
Hollye V. Dotson	Health Services	None	\$2,809.76 Monthly - Dental Hygienist
Michael Hope	Road Department	None	\$2,636.42 Monthly - Crew Leader I

TOTAL COUNT: 49
AVERAGE AGE: 39.79


 Michael Lewis
 Administrator of Human Resources

I certify that the attached list of new employees are eligible to participate in the Shelby County Retirement System.

ACTIVE EMPLOYEES IN THE PENSION PLAN

	October 31, 2018	AS OF November 30, 2018	MTD EMPLOYEE GAIN/(LOSS)
PLAN A	1,198	1,192	(6)
PLAN A (ROH)	4	4	0
PLAN B	3	3	0
PLAN C	1,808	1,803	(5)
PLAN D	1,958	1,978	20
TOTAL	4,971	4,980	9

	November 30, 2017	AS OF November 30, 2018	YTD EMPLOYEE GAIN/(LOSS)
PLAN A	1,285	1,192	(93)
PLAN A (ROH)	4	4	0
PLAN B	4	3	(1)
PLAN C	1,998	1,803	(195)
PLAN D	1,677	1,978	301
TOTAL	4,968	4,980	12

RETIREE COUNT AND PAYROLL FOR November 30, 2018

PLAN A	2,011	\$ 2,853,913.76	(27) disability
PLAN B	888	1,814,726.85	(19) disability
PLAN C	1,078	2,688,766.27	
TOTAL RETIREES	3,977	\$ 7,357,406.88	
REFUNDS/ROLLOVERS		\$ 381,847.07	
RETIREE PAYROLL		7,739,253.95	
TOTAL RETIREE PAYROLL		\$ 8,121,101.02	

DECEMBER 2018 REFUNDS, CASH OUTS & ROLLOVERS

EMPLOYEE NO.	NAME	TYPE OF BENEFIT	PLAN	AMOUNT
REFUNDS				
20147	MYRON APPLEWHITE	REFUND	D-SAFETY	\$ 7,210.14
18453	STEVEN BASAR	REFUND	D	14,819.15
19854	LATERICKA BROWN	REFUND	D-SAFETY	7,885.77
21286	VICTOR CAMPBELL II	REFUND	D-SAFETY	4,192.91
16609	TEMPIA COLE-WADDELL	REFUND	D	6,933.42
13790	MELISSA COROTHERS	REFUND	D-SAFETY	11,630.04
21196	JESSIE DAVIS	REFUND	D-SAFETY	4,014.23
17460	STEPHANIE DORSEY	REFUND	C	17,325.83
20896	MARSHONA GAINES	REFUND	D-SAFETY	5,213.75
13851	TIMMY GREEN	ROLLOVER	D	6,748.54
20125	ALYCE HART	REFUND	D-SAFETY	10,082.42
19660	THERESA HILL	REFUND	D	21,581.22
11843	GLORIA LYNCH-COLLINS - DECEASED	REFUND	A	
	EDWARD DEAR - BENEFICIARY	REFUND		3,964.40
11843	GLORIA LYNCH-COLLINS - DECEASED	REFUND	A	
	FELECIA DEAR - BENEFICIARY	REFUND		3,964.40
21613	WANDA MONTGOMERY	REFUND	D	2,164.62
21205	TONY MOORE	REFUND	D-SAFETY	4,470.82
21190	TRACEY MORRIS	REFUND	D	3,915.76
20725	JAMES PERRY	REFUND	D-SAFETY	6,704.20
22145	TONY PINSON	REFUND	D	1,488.20
20440	GERALD SARDIN	REFUND	D	8,761.06
20732	TERRISHA SMITH	REFUND	D-SAFETY	6,718.96
19179	ERICA TAYLOR	REFUND	D-SAFETY	15,928.08
	TOTAL REFUNDS			\$ 175,717.92
CASH OUTS				
15639	PRECILLA BOBO	CASH-OUT		\$22,167.15
6808	TREMAYNE HOPSON	CASH-OUT		8,380.72
15906	MONTEZ KING	CASH-OUT		44,109.99
	TOTAL CASH OUTS			\$74,657.86
ROLLOVERS				
15639	PRECILLA BOBO	ROLLOVER	C	\$22,167.15
11220	SYLVESTER BRADLEY	ROLLOVER	C	25,862.18
2461	JOHN NIVEN, JR.	ROLLOVER	D	24,511.21
	TOTAL ROLLOVERS			\$ 72,540.54
	GRAND TOTAL REFUNDS, CASH OUTS & ROLLOVERS			\$ 322,916.32

Refunds are due to participants who are not vested in the pension system.

Cash Outs are due to participants who are vested but not yet eligible for retirement, or their monthly benefit is under \$200.

Amounts are processed as follows:

Less than \$30,000	Mandatory Cash Out/Rollover
\$30,000 to \$50,000	Optional Cash Out/Rollover
\$50,000 and over	Deferred Benefit

(Not eligible for retirement until age 55 - 65)

*ASTERISK DENOTES ANOTHER BENEFIT DUE CURRENTLY OR IN THE FUTURE

DECEMBER 2018 SURVIVORS' BENEFITS

MEMBER STATUS	NAME	DEPARTMENT	PENSION PLAN	DATE OF DEATH	YEARS OF SERVICE	SURVIVOR	DATE OF BENEFIT	ESTIMATED MONTHLY BENEFIT
ACTIVE	DANNY BROWN	SHERIFF'S OFFICE	C	10/23/2018	24.39	KIMBERLY BROWN	10/24/2018	\$776.37
RETIRED	EVERETT R. WRAY	ROAD DEPARTMENT	B	10/20/2018	25.66	MARTHA WRAY	10/21/2018	\$915.58

**SHELBY COUNTY RETIREMENT SYSTEM
INVESTMENT REPORT TO THE BOARD**

December 4, 2018

I. Market Value of Assets as of October 31, 2018: \$1,152,523,000

II. Performance Evaluation:

FUND TYPE	% of Portfolio	MONTH		FISCAL YTD		12 MONTHS	
		Shelby	Index	Shelby	Index	Shelby	Index
Domestic Equity	29.3%	-8.64%	-7.29%	-2.12%	-0.55%	5.36%	6.72%
Fixed Income	21.7%	-1.31%	-1.12%	-2.09%	-2.03%	-2.57%	-2.05%
International Equity	15.8%	-8.61%	-8.13%	-8.93%	-7.49%	-7.69%	-8.24%
Alternative Investments	12.3%	0.37%	-2.68%	1.96%	-2.49%	5.76%	-0.89%
Master Limited Partnerships	7.9%	-7.38%	-7.99%	-4.16%	-1.95%	1.22%	0.68%
Low Volatility Equity	4.7%	-5.42%	-4.70%	-0.46%	0.80%	2.31%	3.61%
Private Equity IRR	3.9%	-0.52%		-2.65%		-1.16%	
Operating Cash	2.7%	0.18%	0.18%	0.67%	0.67%	1.68%	1.68%
Private Real Assets	1.6%	-0.76%	-1.26%	-3.01%	0.44%	-1.57%	0.74%
TOTAL	100.0%	-5.15%	-4.36%	-2.83%	-1.44%	0.71%	0.99%

III. Investment Report for the month ended October 31, 2018

In the major investment categories, only the alternative investments made a slight gain (.37%). The MLPs, Alternative Investments, and Private Real Assets beat the index for the month, with the MLPs and Alternative Investments also outperforming the market on a 12 month basis. The total fund lost 5.15% for the month and 2.83% at fiscal YTD, but maintained a positive return of .71% over 12 months. After paying monthly benefits and expenses, the fund decreased by \$63,886,000 to \$1,152,523,000.

IV. Domestic Equity: (29.3% of total portfolio)

Performance of the domestic equity managers compared unfavorably with the benchmarks for all reporting periods. This fund posted the largest decline for the month at -8.64% versus the index of -7.29%, with a 12 month gain of 5.36% versus the index of 6.72%.

V. Fixed Income: (21.7% of total portfolio)

The fixed income managers posted losses again this month across all reporting periods at October 31st. Shelby performance also compared unfavorably to the index for all periods – although by a fairly small margin.

VI. International Equity: (15.8% of total portfolio)

International equities declined by 8.61% for the month compared to the market loss of 8.13%. The unfavorable margin is wider for the fiscal YTD period, although comparing favorably to index over 12 months at a loss of -7.69 versus -8.24%.

VII. Alternative Strategies: (12.3% of total portfolio)

The hedge-fund group outperformed the composite with gains posted for all reporting periods in October. The fiscal YTD increase of 1.96% and the 12 month increase of 5.76% compared favorably with the negative benchmarks of -2.49% and -0.89%, respectively.

VIII. Master Limited Partnerships (MLP): (7.9% of total portfolio)

The MLP managers as a group performed better than the market in October with a decrease of -7.38% compared to the benchmark decline for the month of -7.99%. The comparison is unfavorable, however, for the YTD fiscal year period at -4.16% compared to the index decline of -1.95%. Results for the 12 month period results are positive at 1.22% for Shelby compared to the 0.68% index.

IX. Private Equity Markets Portfolio:

There is no change reported for the Private Equity Portfolio with an internal rate of return since inception of a negative 1.16%.

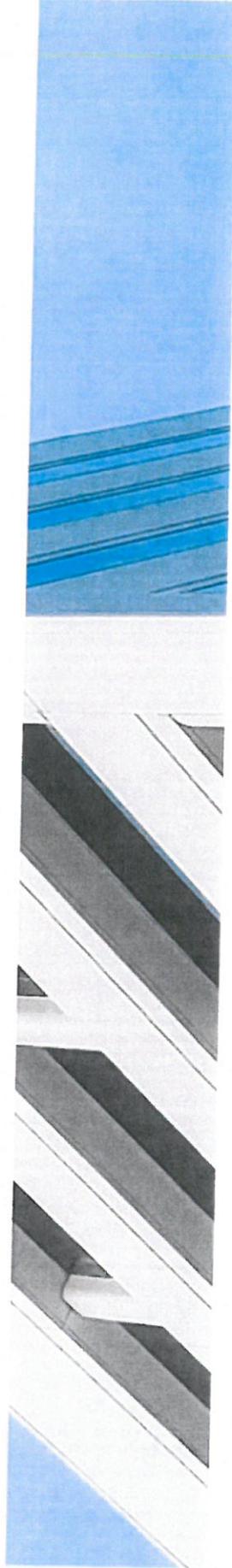
X. Total Fund Policy Index:

The Total Fund Policy Index represents the weighted average performance of each manager's benchmark and is compared to the total performance of the entire portfolio. The total fund declined by more than the index for October at -5.15% versus -4.36% and for the fiscal YTD at -2.83% versus -1.44%. Results for the one year period are more closely aligned to the market at 0.71% compared to the 0.99% index.



WILSHIRE ASSOCIATES

Wilshire Consulting



Shelby County Government Retirement System

Monthly Performance Summary

October 31, 2018

Shelby County Retirement Plan Performance Summary



Net-of-Fee Returns

Periods Ending October 31, 2018

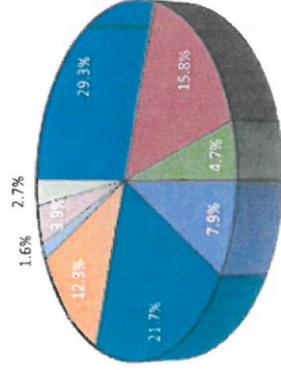
	Month	YTD	Fiscal YTD
Domestic Equity	-8.64	1.57	-2.12
International Equity	-8.61	-10.40	-8.93
Low Volatility Equity	-5.42	-1.92	-0.46
MLPs	-7.38	-3.11	-4.16
Fixed Income	-1.31	-3.10	-2.09
Alternative Investments	0.37	5.04	1.96
Private Real Assets	-0.76	-2.77	-3.01
Private Equity	-0.52	4.83	-2.65
Operating Cash	0.18	1.48	0.67
Total Fund	-5.15	-1.64	-2.83
Shelby County Retirement Policy	-4.36	-1.40	-1.44
Value-added vs. Policy	-0.79	-0.24	-1.39

Standard & Poor's 500	-6.84	3.01	0.35
Barclays Gov't/Credit	-0.87	-2.70	-0.81
Barclays US Aggregate	-0.79	-2.38	-0.77
Barclays Government	-0.47	-2.08	-1.03
Barclays Intermediate Aggregate	-0.31	-1.17	-0.20
Russell 1000 Value	-5.18	-1.46	0.23
Russell 1000 Growth	-8.94	6.62	-0.59
Russell 3000 Value	-5.46	-1.52	-0.36
Russell 2000 Small Cap	-10.86	-0.60	-7.67
MSCI Emerging Markets	-8.71	-15.72	-9.71
MSCI ACWI x-US	-8.13	-10.97	-7.49
91-Day Treasury Bill	0.18	1.48	0.67

Asset Allocation †

As of October 31, 2018

	Current	% Wgt
Domestic Equity	\$ 337,693	29.3%
International Equity	\$ 182,503	15.8%
Low Volatility Equity	\$ 54,228	4.7%
MLPs	\$ 91,176	7.9%
Fixed Income	\$ 250,360	21.7%
Alternative Investments	\$ 142,247	12.3%
Private Real Assets	\$ 18,385	1.6%
Private Equity	\$ 45,071	3.9%
Operating Cash	\$ 30,860	2.7%
Total Fund	\$ 1,152,523	100.0%



Summary of Cash Flows †

As of October 31, 2018

	Last Month	Fiscal YTD
Beginning Market Value	\$ 1,216,409	\$1,190,075
- Withdrawals	\$ (8,248)	\$ (32,392)
- Fees	\$ (566)	\$ (1,023)
+ Contributions	\$ 7,021	\$ 28,388
= Net Cash Flow	\$ (1,793)	\$ (5,027)
+ Net Investment Change	\$ (62,093)	\$ (32,525)
= Ending Market Value	\$ 1,152,523	\$1,152,523

† Values shown in thousands, (\$000)



Wilshire Consulting
MONTHLY SUMMARY

Investment Performance and Market Values
 For Periods Ending October 31, 2018

	Net of Fee Returns										Market Value	
	Month	QTD	FYTD 6/30/18	1 Year	3 Years	5 Years	10 Years	Inception Return	Inception Date	\$	Percent	
NewSouth												
Russell 3000 Value	-6.78	1.16	6.87	9.48	9.94	15.30	10.64	12/31/85	87,198,076	7.57		
Value Added	-5.46	-0.36	2.78	9.02	8.50	11.28	10.43	12/31/85				
	-1.33	1.52	4.08	0.46	1.44	4.03	0.21	12/31/85				
DFA US Small Cap												
Russell 2000 Value Added	-9.86	-6.93	0.77				11.55	4/30/16	56,581,286	4.91		
	-10.86	-7.67	1.85				13.82	4/30/16				
	1.00	0.75	-1.09				-2.26	4/30/16				
Eagle Asset Mgmt												
Russell Mid Cap Growth Value Added	-12.90	-5.58	4.83	12.04	11.70	14.92	11.02	9/30/04	63,393,808	5.50		
	-9.90	-3.08	6.14	10.39	10.10	15.10	10.03	9/30/04				
	-3.00	-2.50	-1.31	1.65	1.60	-0.18	0.98	9/30/04				
Nuveen Asset Mgmt												
Russell 2000 Value Added	-12.66	-11.67	-3.03				6.30	8/31/16	5,718,496	0.50		
	-10.86	-7.67	1.85				11.02	8/31/16				
	-1.80	-3.99	-4.89				-4.72	8/31/16				
Rhumbline S&P 500 Index												
Standard & Poor's 500 Value Added	-6.84	0.33	7.28				15.12	10/31/16	60,042,654	5.21		
	-6.84	0.35	7.35				15.20	10/31/16				
	-0.00	-0.02	-0.07				-0.09	10/31/16				
Vanguard S&P 500 Index												
Standard & Poor's 500 Value Added	-6.84	0.34	7.31	11.49			10.02	4/30/15	64,758,296	5.62		
	-6.84	0.35	7.35	11.52			10.04	4/30/15				
	-0.01	-0.01	-0.04	-0.03			-0.02	4/30/15				



Wilshire Consulting

MONTHLY SUMMARY

Investment Performance and Market Values
For Periods Ending October 31, 2018

	Net of Fee Returns										Market Value	
	Month	QTD	FYTD 6/30/18	1 Year	3 Years	5 Years	10 Years	Inception Return	Inception Date	Market Value		
										\$	Percent	
Total Domestic Equity	-8.64	-8.64	-2.12	5.36	10.84	8.43	13.31	9.69	12/31/85	337,692,615	29.30	
Policy Index	-7.29	-7.29	-0.55	6.72	11.44	10.98	13.43		12/31/85			
Value Added	-1.34	-1.34	-1.56	-1.36	-0.60	-2.55	-0.12		12/31/85			



Wilshire Consulting
MONTHLY SUMMARY
 Investment Performance and Market Values
 For Periods Ending October 31, 2018

	Net of Fee Returns										Market Value	
	Month	QTD	FYTD 6/30/18	1 Year	3 Years	5 Years	10 Years	Inception Return	Inception Date	\$	Percent	
Lazard												
MSCI EAFE Index (N)	-7.66	-7.66	-6.57	-4.05	2.47			3.75	12/31/14	66,069,772	5.73	
Value Added	-7.96	-7.96	-6.71	-6.85	3.62			3.39	12/31/14			
	0.30	0.30	0.14	2.80	-1.15			0.36	12/31/14			
Vanguard Dev Mkts												
MSCI World X-US (N)	-8.55	-8.55	-7.55	-7.65	4.28			4.04	12/31/14	57,220,395	4.96	
Value Added	-7.95	-7.95	-6.74	-6.76	3.80			3.05	12/31/14			
	-0.60	-0.60	-0.81	-0.89	0.48			1.00	12/31/14			
OFI Emerging												
MSCI Emerging Mkts (N)	-9.71	-9.71	-12.67	-11.44	6.71	0.91	9.46	6.91	6/30/06	59,152,500	5.13	
Value Added	-8.71	-8.71	-9.71	-12.52	6.52	0.78	7.84	4.46	6/30/06			
	-1.00	-1.00	-2.96	1.08	0.19	0.13	1.62	2.46	6/30/06			
Thornburg												
Total Intl Equity	-2.37	-2.37	-3.12					-8.66	3/31/18	59,894	0.01	
Policy Index	-8.61	-8.61	-8.93	-7.69	4.33	1.93	7.28	4.58	11/30/00	182,502,561	15.84	
Value Added	-8.13	-8.13	-7.49	-8.24	4.37	1.63	6.48	4.16	11/30/00			
	-0.47	-0.47	-1.45	0.55	-0.04	0.30	0.81	0.41	11/30/00			



Wilshire Consulting

MONTHLY SUMMARY

Investment Performance and Market Values

For Periods Ending October 31, 2018

	Net of Fee Returns										Market Value	
	Month	QTD	FYTD 6/30/18	1 Year	3 Years	5 Years	10 Years	Inception Return	Inception Date		Market Value	
											\$	Percent
Acadian Managed Volatility	-5.42	-5.42	-0.46	2.31	7.21			7.08	12/31/14		54,228,020	4.71
MSCI ACWI Min Vol (N)	-4.70	-4.70	0.80	3.61	8.12			7.26	12/31/14			
Value Added	-0.72	-0.72	-1.26	-1.30	-0.91			-0.18	12/31/14			
Low Volatility Equities	-5.42	-5.42	-0.46	2.31	7.21			7.08	12/31/14		54,228,020	4.71
MSCI ACWI Min Vol (N)	-4.70	-4.70	0.80	3.61	8.12			7.26	12/31/14			
Value Added	-0.72	-0.72	-1.26	-1.30	-0.91			-0.18	12/31/14			
Sailent MLP	-7.31	-7.31	-3.75	2.56	1.17			-8.63	8/31/14		49,176,447	4.27
Alerian MLP Index	-7.99	-7.99	-1.95	0.68	-1.52			-10.59	8/31/14			
Value Added	0.68	0.68	-1.80	1.88	2.69			1.96	8/31/14			
Tortoise	-7.45	-7.45	-4.64	-0.30	0.12			-6.19	9/30/14		41,999,950	3.64
Alerian MLP Index	-7.99	-7.99	-1.95	0.68	-1.52			-10.45	9/30/14			
Value Added	0.54	0.54	-2.69	-0.98	1.64			4.26	9/30/14			
MLP Composite	-7.38	-7.38	-4.16	1.22	0.76			-6.69	8/31/14		91,176,398	7.91
Alerian MLP Index	-7.99	-7.99	-1.95	0.68	-1.52			-10.59	8/31/14			
Value Added	0.61	0.61	-2.22	0.54	2.28			3.90	8/31/14			
Total Equity	-8.20	-8.20	-4.23	0.51	7.25			3.99	8/31/14		665,599,594	57.75



Wilshire Consulting

MONTHLY SUMMARY

Investment Performance and Market Values
For Periods Ending October 31, 2018

	Net of Fee Returns										Market Value	
	Month	QTD	FYTD 6/30/18	1 Year	3 Years	5 Years	10 Years	Inception Return	Inception Date	\$	Percent	
Brandywine												
Citigroup World Govt Bond	-3.71	-3.71	-4.60	-5.77	2.51	1.21	6.45	5.08	3/31/05	76,710,472	6.66	
Value Added	-1.10	-1.10	-2.70	-2.09	1.32	-0.21	2.30	2.57	3/31/05			
	-2.61	-2.61	-1.90	-3.68	1.19	1.42	4.15	2.51	3/31/05			
Piedmont												
Policy Index	-0.56	-0.56	-0.58	-3.08	0.56	2.08	5.88	5.76	7/31/91	50,771,391	4.41	
Value Added	-0.87	-0.87	-0.81	-2.31	1.15	1.87	4.13	5.42	7/31/91			
	0.30	0.30	0.23	-0.77	-0.59	0.21	1.75	0.35	7/31/91			
Total Investment Grade												
Bloomberg Global Aggregate	-2.48	-2.48	-3.04	-4.72	1.44	1.43		1.57	9/30/13	127,481,864	11.06	
Value Added	-1.12	-1.12	-2.03	-2.05	1.52	0.33		0.52	9/30/13			
	-1.37	-1.37	-1.01	-2.67	-0.09	1.10		1.06	9/30/13			
Congruent Credit Strategies II												
HFRI Event-Driven: Distress/Rest	0.00	0.00	15.47	75.72	3.65	-2.30		-0.05	3/31/12	285,188	0.02	
Value Added	-1.18	-1.18	0.16	4.49	6.81	3.22		4.89	3/31/12			
	1.18	1.18	15.32	71.23	-3.16	-5.52		-4.93	3/31/12			
Congruent Credit Strategies III												
HFRI Event-Driven: Distress/Rest	0.00	0.00	-5.87	-4.61	-0.91	-5.71		-5.62	9/30/13	6,984,413	0.61	
Value Added	-1.18	-1.18	0.16	4.49	6.81	3.22		3.52	9/30/13			
	1.18	1.18	-6.03	-9.10	-7.72	-8.93		-9.14	9/30/13			
Courage Credit Opps Offshore II												
HFRI Event-Driven: Distress/Rest									7/31/10	11,602	0.00	
Value Added									7/31/10			
									7/31/10			
Courage Credit Opps Offshore III												
HFRI Event-Driven: Distress/Rest	5.55	5.55	3.00	37.63	9.50	2.84		2.84	10/31/13	14,435,278	1.25	
Value Added	-1.18	-1.18	0.16	4.49	6.81	3.22		3.22	10/31/13			
	6.73	6.73	2.84	33.14	2.69	-0.38		-0.38	10/31/13			



Wilshire Consulting

MONTHLY SUMMARY

Investment Performance and Market Values
For Periods Ending October 31, 2018

	Net of Fee Returns										Market Value	
	Month	QTD	FYTD 6/30/18	1 Year	3 Years	5 Years	10 Years	Inception Return	Inception Date	\$	Percent	
Credit Suisse												
CSFB Leveraged Loan	-0.03	-0.03	1.67	3.69	5.13	4.17		4.17	1/31/13	19,164,484	1.66	
Value Added	0.01	0.01	1.94	4.89	5.48	4.19		4.33	1/31/13			
	-0.04	-0.04	-0.27	-1.21	-0.35	-0.01		-0.16	1/31/13			
GoldenTree Distressed Debt												
HFRI Event-Driven: Distress/Rest	0.40	0.40	-3.90	-3.11	2.14	11.19		10.27	7/31/10	9,229,003	0.80	
Value Added	-1.18	-1.18	0.16	4.49	6.81	3.22		5.03	7/31/10			
	1.58	1.58	-4.05	-7.60	-4.66	7.97		5.24	7/31/10			
Medley Opportunity II												
HFRI Event-Driven: Distress/Rest	0.00	0.00	-1.30	-9.75	-4.10	-0.49		0.66	5/31/12	13,854,256	1.20	
Value Added	-1.18	-1.18	0.16	4.49	6.81	3.22		5.35	5/31/12			
	1.18	1.18	-1.45	-14.24	-10.91	-3.71		-4.69	5/31/12			
MacKay Shields												
ML High Yld II Tot Ret	-1.30	-1.30	0.37	0.19	6.36			5.32	3/31/15	20,555,635	1.78	
Value Added	-1.60	-1.60	0.78	0.86	6.64			4.83	3/31/15			
	0.30	0.30	-0.41	-0.68	-0.28			0.49	3/31/15			
Total Hi Yld / Opportunistic												
ML High Yld II Tot Ret	0.65	0.65	-0.17	3.58	3.22	3.34		3.27	9/30/13	84,519,860	7.33	
Value Added	-1.60	-1.60	0.78	0.86	6.64	4.69		5.11	9/30/13			
	2.25	2.25	-0.95	2.72	-3.42	-1.35		-1.83	9/30/13			
Lazard EMD												
EMD Index	-2.20	-2.20	-2.43	-6.98				-1.90	7/31/16	38,358,459	3.33	
Value Added	-2.06	-2.06	-1.82	-5.43				0.49	7/31/16			
	-0.14	-0.14	-0.61	-1.55				-2.39	7/31/16			



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MONTHLY SUMMARY

Investment Performance and Market Values
For Periods Ending October 31, 2018

	Net of Fee Returns							Market Value			
	Month	QTD	FYTD 6/30/18	1 Year	3 Years	5 Years	10 Years	Inception Return	Inception Date	\$	Percent
Total Emerging Debt											
EMD Index	-2.20	-2.20	-2.43	-6.98	2.95	1.26		1.81	9/30/13	38,358,459	3.33
Value Added	-2.06	-2.06	-1.82	-5.43	3.70	0.88		1.41	9/30/13		
	-0.14	-0.14	-0.61	-1.55	-0.75	0.37		0.40	9/30/13		
Total Fixed Income											
Policy Index	-1.31	-1.31	-2.09	-2.57	2.28	2.04	6.86	6.35	3/31/86	250,360,182	21.72
Value Added	-1.12	-1.12	-2.03	-2.05	1.52	0.33	4.63		3/31/86		
	-0.19	-0.19	-0.06	-0.52	0.75	1.71	2.23		3/31/86		



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MONTHLY SUMMARY

Investment Performance and Market Values
For Periods Ending October 31, 2018

	Net of Fee Returns										Market Value	
	Month	QTD	FYTD 6/30/18	1 Year	3 Years	5 Years	10 Years	Inception Return	Inception Date	Market Value		
										\$	Percent	
GT ERISA	0.32	0.32	2.28	5.66	4.50	5.28	6.69	6.11	2/28/05	74,150,784	6.43	
HFRI Fund-of-Funds Composite Value Added	-2.68	-2.68	-2.49	-0.89	2.05	2.35	2.93	2.56	2/28/05			
	3.00	3.00	4.77	6.55	2.45	2.93	3.77	3.55	2/28/05			
Ironwood Partners	0.47	0.47	1.54	5.88	4.54	5.18	5.93	4.31	2/28/05	62,881,205	5.46	
HFRI Fund-of-Funds Composite Value Added	-2.68	-2.68	-2.49	-0.89	2.05	2.35	2.93	2.56	2/28/05			
	3.15	3.15	4.04	6.78	2.49	2.84	3.01	1.76	2/28/05			
Preserver Partners LLC	-0.26	-0.26	2.43					4.31	4/30/18	5,215,301	0.45	
HFRI Fund-of-Funds Composite Value Added	-2.68	-2.68	-2.49					-2.24	4/30/18			
	2.42	2.42	4.92					6.55	4/30/18			
Total Alt Strategies	0.37	0.37	1.96	5.76	3.82	3.81	5.44	4.37	2/28/05	142,247,290	12.34	
HFRI Fund-of-Funds Composite Value Added	-2.68	-2.68	-2.49	-0.89	2.05	2.35	2.93	2.56	2/28/05			
	3.04	3.04	4.45	6.65	1.77	1.46	2.51	1.81	2/28/05			



Wilshire Consulting
MONTHLY SUMMARY
 Investment Performance and Market Values
 For Periods Ending October 31, 2018

	Net of Fee Returns										Market Value	
	Month	QTD	FYTD 6/30/18	1 Year	3 Years	5 Years	10 Years	Inception Return	Inception Date	Market Value		
										\$	Percent	
JPMorgan Infrastructure												
MSCI World Infrastructure (N)	0.00	0.00	-3.01	3.33	-0.68	-0.76	-0.55	-0.19	10/31/07	8,337,837	0.72	
Value Added	-2.51	-2.51	-0.17	-2.60	5.15	4.25	6.77	1.96	10/31/07			
	2.51	2.51	-2.83	5.93	-5.83	-5.01	-7.32	-2.15	10/31/07			
Sustainable Woodlands II												
NCREIF Timberland Index	-3.28	-3.28	-3.34	-6.14	-0.41	0.92		0.47	4/30/09	4,146,505	0.36	
Value Added	0.00	0.00	1.02	4.00	3.52	5.99		3.85	4/30/09			
	-3.28	-3.28	-4.36	-10.13	-3.93	-5.07		-3.38	4/30/09			
RMK Select Timberland II												
NCREIF Timberland Index	0.00	0.00	-2.59	-4.06	-1.46	-0.61	-1.02	0.12	5/31/07	5,901,131	0.51	
Value Added	0.00	0.00	1.02	4.00	3.52	5.99	4.01	5.47	5/31/07			
	0.00	0.00	-3.61	-8.06	-4.97	-6.60	-5.03	-5.34	5/31/07			
Private Real Assets												
Policy Index	-0.76	-0.76	-3.01	-1.57	-0.90	-0.26	-0.71	0.31	5/31/07	18,385,473	1.60	
Value Added	-1.26	-1.26	0.44	0.74	4.43	5.25	5.58	4.28	5/31/07			
	0.50	0.50	-3.45	-2.31	-5.34	-5.51	-6.29	-3.98	5/31/07			

Sector/Fund	Inception Date	Commitment Value	Capital Called	Paid-in-Capital	Distributions	Market Value	IRR	TVPI
Private Real Assets								
JPMorgan Infrastructure Inv. Fund	Oct-07	\$ 10,000,000	\$ 10,000,000	1.00	\$ 3,564,340	\$ 8,459,126	2.44%	1.20
Molpus Sust. Woodlands Fund II	Jun-09	\$ 5,000,000	\$ 5,000,000	1.00	\$ 1,109,842	\$ 4,302,123	1.01%	1.08
RMK Select Timberland Inv. Fund II	Jun-07	\$ 10,000,000	\$ 11,996,314	1.20	\$ 4,269,042	\$ 7,191,486	-0.59%	0.96
Total Private Real Assets Composite	Jun-07	\$ 25,000,000	\$ 26,996,314	1.08	\$ 8,943,224	\$ 19,952,735	0.88%	1.07
U.S. Buyout								
Hastings Equity Fund III	Aug-14	\$ 7,500,000	\$ 7,147,580	0.95	\$ 2,269,804	\$ 7,903,293	27.82%	1.42
Pharos Capital II	Mar-05	\$ 10,000,000	\$ 9,150,000	0.92	\$ 5,707,718	\$ 5,971,493	3.70%	1.28
Pharos Capital III	Dec-12	\$ 7,000,000	\$ 4,690,000	0.67	\$ 532,829	\$ 5,193,571	8.17%	1.22
SSM Partners Growth Equity I	Dec-08	\$ 5,000,000	\$ 4,750,000	0.95	\$ 3,912,405	\$ 3,315,459	10.41%	1.52
SSM Partners Growth Equity II	Mar-15	\$ 7,976,598	\$ 3,429,937	0.43	\$ -	\$ 4,175,479	11.97%	1.22
Total U.S. Buyout	Mar-05	\$ 37,476,598	\$ 29,167,517	0.78	\$ 12,422,756	\$ 26,559,295	7.30%	1.34
U.S. Special Situation								
Capital Point II	Nov-12	\$ 15,000,000	\$ 14,265,644	0.95	\$ 13,416,815	\$ 2,244,481	5.23%	1.10
Total U.S. Special Situations	Nov-12	\$ 15,000,000	\$ 14,265,644	0.95	\$ 13,416,815	\$ 2,244,481	5.23%	1.10
U.S. Venture Capital								
Delta Capital I	Jun-99	\$ 8,000,000	\$ 8,000,000	1.00	\$ -	\$ 218,478	-18.53%	0.03
Delta Capital II	Jun-02	\$ 12,000,000	\$ 12,000,000	1.00	\$ 4,739,533	\$ 3,008	-13.68%	0.40
MB Venture Cap	Oct-02	\$ 6,000,000	\$ 5,940,000	0.99	\$ 5,119,501	\$ 158,639	-2.73%	0.89
MB Venture Cap II	Jul-05	\$ 15,000,000	\$ 13,040,000	0.87	\$ 2,135,235	\$ 3,955,073	-9.40%	0.47
MB Venture Cap III	Nov-11	\$ 10,000,000	\$ 7,700,000	0.77	\$ 329,088	\$ 8,756,584	6.10%	1.18
Total U.S. Venture Capital	Jun-99	\$ 51,000,000	\$ 46,680,000	0.92	\$ 12,323,357	\$ 13,091,782	-8.17%	0.54
Private Markets Portfolio Total	Jun-99	\$ 128,476,598	\$ 117,109,475	0.91	\$ 47,106,152	\$ 61,848,293	-1.16%	0.93



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MONTHLY SUMMARY
 Investment Performance and Market Values
 For Periods Ending October 31, 2018

	Net of Fee Returns										Market Value	
	Month	QTD	FYTD 6/30/18	1 Year	3 Years	5 Years	10 Years	Inception Return	Inception Date		Market Value	
											\$	Percent
Total Cash												
91-Day Treasury Bill	0.18	0.18	0.67	1.68	0.90	0.55	0.15	3.11	11/30/86		30,859,596	2.68
Value Added	0.18	0.18	0.67	1.68	0.90	0.55	0.35	3.35	11/30/86			
	0.00	0.00	0.00	0.00	0.00	-0.00	-0.20	-0.24	11/30/86			
Total Fund												
IPS Policy Index	-5.15	-5.15	-2.83	0.71	5.16	3.76	7.97	7.77	12/31/85		1,152,522,952	100.00
Value Added	-4.36	-4.36	-1.44	0.99	5.36	4.35	7.90		12/31/85			
	-0.79	-0.79	-1.39	-0.28	-0.20	-0.59	0.07		12/31/85			



Values in '000s)

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
January	\$ 792,654	\$ 760,478	\$ 894,361	\$ 971,713	\$ 977,584	\$ 645,076	\$ 831,682	\$ 952,483	\$ 916,958	\$ 1,003,731	\$ 1,079,113	\$ 1,096,378	\$ 993,234	\$ 1,097,365	\$ 1,229,295
February	\$ 805,970	\$ 839,279	\$ 867,289	\$ 970,231	\$ 976,720	\$ 614,879	\$ 813,724	\$ 979,264	\$ 944,497	\$ 999,570	\$ 1,109,454	\$ 1,126,893	\$ 988,215	\$ 1,109,613	\$ 1,193,480
March	\$ 804,407	\$ 826,856	\$ 904,986	\$ 980,777	\$ 962,535	\$ 637,923	\$ 847,092	\$ 983,338	\$ 949,440	\$ 1,013,303	\$ 1,108,896	\$ 1,124,411	\$ 1,032,655	\$ 1,115,032	\$ 1,180,725
April	\$ 786,098	\$ 805,114	\$ 918,910	\$ 1,007,860	\$ 994,561	\$ 689,285	\$ 862,708	\$ 1,007,759	\$ 944,912	\$ 1,022,008	\$ 1,105,211	\$ 1,129,095	\$ 1,049,049	\$ 1,124,232	\$ 1,184,936
May	\$ 787,469	\$ 825,480	\$ 896,672	\$ 1,038,830	\$ 1,016,372	\$ 729,672	\$ 817,268	\$ 996,656	\$ 893,647	\$ 1,026,809	\$ 1,118,842	\$ 1,125,251	\$ 1,045,877	\$ 1,130,944	\$ 1,195,736
June	\$ 800,906	\$ 836,176	\$ 895,838	\$ 1,042,137	\$ 965,621	\$ 732,371	\$ 796,737	\$ 981,628	\$ 916,060	\$ 1,006,912	\$ 1,135,414	\$ 1,112,926	\$ 1,051,120	\$ 1,133,207	\$ 1,190,075
July	\$ 780,513	\$ 852,942	\$ 883,952	\$ 1,029,313	\$ 944,167	\$ 766,875	\$ 832,157	\$ 967,944	\$ 919,686	\$ 1,036,079	\$ 1,118,410	\$ 1,108,741	\$ 1,071,020	\$ 1,148,435	\$ 1,210,545
August	\$ 779,052	\$ 854,023	\$ 899,056	\$ 1,025,494	\$ 938,108	\$ 785,314	\$ 815,843	\$ 911,950	\$ 933,450	\$ 1,019,882	\$ 1,137,327	\$ 1,064,117	\$ 1,073,701	\$ 1,145,914	\$ 1,214,937
September	\$ 753,610	\$ 857,754	\$ 906,972	\$ 1,060,831	\$ 845,455	\$ 818,805	\$ 867,463	\$ 842,186	\$ 954,395	\$ 1,054,495	\$ 1,112,495	\$ 1,022,502	\$ 1,085,717	\$ 1,159,129	\$ 1,216,409
October	\$ 796,703	\$ 844,562	\$ 934,629	\$ 1,085,833	\$ 700,096	\$ 809,849	\$ 886,452	\$ 905,557	\$ 954,665	\$ 1,081,160	\$ 1,120,479	\$ 1,061,965	\$ 1,061,586	\$ 1,163,805	\$ 1,152,523
November	\$ 822,008	\$ 857,456	\$ 955,595	\$ 1,040,375	\$ 656,190	\$ 827,967	\$ 882,218	\$ 886,193	\$ 958,175	\$ 1,091,624	\$ 1,124,724	\$ 1,057,845	\$ 1,065,990	\$ 1,174,377	
December	\$ 844,278	\$ 864,986	\$ 964,156	\$ 1,034,531	\$ 670,488	\$ 848,012	\$ 932,353	\$ 881,972	\$ 973,814	\$ 1,107,214	\$ 1,106,477	\$ 1,037,437	\$ 1,079,926	\$ 1,189,522	

Total Fund

Total Fund Composite		12/31/2014 - Present
14.1%	Wilshire 5000	
10.4%	MSCI ACWI X U.S. (N)	
8.2%	MSCI ACWI Min Vol (N)	
10.0%	Alerian MLP Index	
6.7%	Bloomberg Barclays Aggregate	
1.0%	BofA ML High Yield TR II	
6.4%	JPM EMBI Global Diversified	
5.1%	Bloomberg Barc. Global Aggregate	
6.4%	HFRI Event Driven: Dist./Rest.	
16.0%	HFRI Fund of Funds	
1.0%	NCREIF ODCE (net)	
4.0%	NCREIF Timberland	
4.0%	MSCI World Infrastructure (N)	
6.6%	S&P 500 + 3%	
30.0%	Wilshire 5000	10/01/2013 - 12/31/2014
20.0%	MSCI ACWI X U.S. (N)	
20.0%	Bloomberg Barc. Global Aggregate	
15.0%	HFRI Fund-of-Funds Composite	
5.0%	S&P 500 + 3%	
5.0%	NCREIF ODCE (N)	
2.5%	NCREIF Timberland	
2.5%	MSCI World Infrastructure (N)	

Domestic Equity		
Domestic Equity Composite	100.0% Wilshire 5000	10/01/2013 - Present
International Equity		
International Equity Composite	100.0% MSCI ACWI X U.S. (N)	10/01/2013 - Present
Low Volatility Equity Composite	100.0% MSCI ACWI Minimum Volatility (N)	01/01/2015 - Present
Master Limited Partnerships (MLPs)		
MLP Composite	100.0% Alerian MLP	01/01/2014 - Present
Fixed Income		
Total Fixed Income Composite	100.0% Barclays Global Aggregate	10/01/2013 - Present
Investment Grade Fixed Income Composite	100.0% Barclays Global Aggregate	10/01/2013 - Present
High Yield/Oppportunistic Composite	100.0% ML High Yield II Total Return	10/01/2013 - Present
Emerging Market Debt Composite	100.0% JPM EMBI Global Diversified	10/01/2013 - Present

Alternatives		
Alternative Strategies Composite	100.0% HFRI Fund-of-Funds Composite	01/01/2015 - Present
Real Assets		
Private Real Assets Composite	50.0% MSCI World Infrastructure (N) 50.0% NCREIF Timberland	01/01/2007 - Present
Private Equity		
Private Equity Composite	100.0% S&P 500 + 3%	04/01/1987 - Present
Cash		
Cash Composite	100.0% 91-Day Treasury Bill	12/01/1986 - Present



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**Report of the Actuary on the
Annual Valuation of the
Shelby County Retirement System**

Prepared as of June 30, 2018



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November 19, 2018

Board of Commissioners
Shelby County Retirement System
160 North Main Street, Suite 950
Memphis, TN 38103

Members of the Board:

We are pleased to submit the results of the actuarial valuation of the Shelby County Retirement System prepared as of June 30, 2018. The purpose of this report is to provide a summary of the funded status of the System as of June 30, 2018 and to recommend rates of actuarially determined contribution rates for the fiscal year ending June 30, 2020. The information needed for the County under the Governmental Accounting Standards Board Statements No. 67 and 68 (GASB 67 and 68) will be provided in separate reports. However, for informational purposes, we have also provided several accounting tables in Section VI.

On the basis of the valuation, it is recommended that employer contributions to the System be set at a rate of 21.83% of payroll for the fiscal year ending June 30, 2020. This is a decrease in the contribution rate recommended in the prior valuation of 22.75%. The promised benefits of the System are included in the calculated contribution rate which is developed using the Entry Age Normal (EAN) cost method. A ten-year smoothed market value of plan assets method is used to calculate the actuarial value of assets. Gains and losses are reflected in the unfunded accrued liability that is being amortized by regular annual contributions within a 22-year period as of the valuation date. The initial obligation for Plan C is being amortized by annual contributions within an 8-year period as of the valuation date. The blended amortization period for these two components of the unfunded accrued liability is 20 years.

Since the previous valuation, several changes were made to the demographic assumptions and actuarial methods per the findings of the Experience Investigation for the Five-Year Period Ending June 30, 2017 adopted by the Board October 2, 2018. These changes are listed on page 2 and Schedule D of this report. No changes were made to the plan provisions since the previous valuation.

This is to certify that the independent consulting actuary is a Member of the American Academy of Actuaries and has experience in performing valuations for public retirement systems, that the valuation was prepared in accordance with principles of practice prescribed by the Actuarial Standards Board, and that the actuarial calculations were performed by qualified actuaries in accordance with accepted actuarial procedures, based on the current provisions of the System and on actuarial assumptions that are internally consistent and reasonably based on the actual experience of the System. While not verifying the data at source, the actuary performed tests for consistency and reasonability.

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Board of Commissioners
November 19, 2018
Page 2

Future actuarial results may differ significantly from the current results presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the plan's funded status); and changes in plan provisions or applicable law. Since the potential impact of such factors is outside the scope of a normal annual actuarial valuation, an analysis of the range of results is not presented herein.

The actuarial computations presented in this report are for purposes of determining the recommended funding amount for the System. Use of these computations for purposes other than meeting these requirements may not be appropriate.

We trust that the report will meet the approval of the Board and will furnish the desired information concerning the financial condition of the System.

Respectfully submitted,

A handwritten signature in blue ink that reads 'Edward J. Koebel'.

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

A handwritten signature in blue ink that reads 'Ben Mobley'.

Ben Mobley, ASA, FCA, MAAA
Senior Actuary

EJK/BDM:ld



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Section I – Summary of Principal Results

1. For convenience of reference, the principal results of the current and preceding valuations are summarized below.

Valuation Date	June 30, 2018	June 30, 2017
Active members:		
Number	5,046	5,011
Annualized compensation	\$ 254,181,677	\$ 245,415,321
County to City Transfers:		
Number	174	180
Annualized compensation	\$ 10,543,592	\$ 10,656,480
Retired members and beneficiaries:		
Number	3,905	3,801
Annual allowances	\$ 84,842,799	\$ 80,027,409
Number of participants with deferred benefits	206	207
Assets:		
Market Value	\$ 1,191,573,647	\$ 1,140,289,440
Actuarial Value	1,239,548,144	1,209,053,313
Unfunded actuarial accrued liability	\$ 480,914,261	\$ 490,284,594
Weighted Amortization Period	20 years	21 years
Funded Ratio		
Market Value	69.3%	67.1%
Actuarial Value	72.0%	71.1%
Fiscal Year Ending	June 30, 2020	June 30, 2019
Actuarially determined employer contribution rate (ADEC):		
Normal Cost	4.75%	5.16%
Accrued liability	<u>17.08</u>	<u>17.59</u>
Total	21.83%	22.75%

2. The major benefit and contribution provisions of the Plan as reflected in the valuation are summarized in Schedule E. There have been no changes since the previous valuation.



Section I – Summary of Principal Results

3. Schedule D of this report outlines the full set of actuarial assumptions and methods used in the valuation. Since the previous valuation, the following changes were made to the actuarial assumptions due to the experience investigation for the five-year period ending June 30, 2017:
 - Retirement, withdrawal, and disability rates were changed to more closely reflect recent experience.
 - Mortality rates were changed from being based on the RP-2000 mortality tables to being based on the RP-2014 mortality tables.
 - Merit salary scale was changed to more closely reflect recent experience.
 - Assumed administrative expense as a percentage of payroll added to the total normal cost was increased from 0.50% to 0.55%.
 - The assumed percentage of members who are married for the purposes of valuing pre-retirement survivor benefits was changed.
4. Schedule B shows the development of the actuarial value of assets. The assumed investment rate of return is 7.00%.
5. Comments on the valuation results as of June 30, 2018 are given in Section IV and further discussion of the contributions is set out in Section V.
6. As shown in the Summary of Principal Results, the funded ratio is the ratio of assets to the accrued liability and is different based on market value of assets. The funded ratio is an indication of progress in funding the promised benefits. Since the ratio is less than 100%, there is a need for additional contributions toward payment of the unfunded accrued liability. In addition, this funded ratio does not have any relationship to measuring sufficiency if the plan had to settle its liabilities.



Section II – Membership Data

1. Data regarding the membership of the System for use as a basis of the valuation were furnished by the County. The valuation included 5,046 active members with annualized compensation totaling \$254,181,677. In addition, there are 174 County to City Transfers with total annual base earnings of \$10,543,592. Below we show the active members by Plan.

**THE NUMBER AND ANNUAL BASE EARNINGS
OF ACTIVE MEMBERS
AS OF JUNE 30, 2018**

PLAN	NUMBER	TOTAL ANNUAL BASE EARNINGS
Plan B	4	\$ 411,453
Plan A	1,245	64,440,722
Plan C	1,911	106,048,711
Plan D	<u>1,886</u>	<u>83,280,791</u>
Total	5,046	\$ 254,181,677



Section II – Membership Data

2. The following table shows the number of retired members and beneficiaries as of June 30, 2018 together with the amount of their annual retirement benefits payable under the System as of that date.

**THE NUMBER AND ANNUAL BENEFITS OF
RETIRED MEMBERS AND BENEFICIARIES
AS OF JUNE 30, 2018**

TYPE OF RETIREMENT	PLAN B	PLAN A	PLAN C	PLAN D	TOTAL
Service:					
Number	626	1,618	1,010	0	3,254
Annual Benefits	\$16,815,734	\$28,474,466	\$28,950,447	\$0	\$74,240,647
Disability:					
Number	19	29	0	0	48
Annual Benefits	\$255,394	\$714,863	\$0	\$0	\$970,257
Survivors:					
Number	243	309	51	0	603
Annual Benefits	\$4,613,095	\$3,907,353	\$1,111,447	\$0	\$9,631,895
Total:					
Number	888	1,956	1,061	0	3,905
Annual Benefits	\$21,684,223	\$33,096,682	\$30,061,894	\$0	\$84,842,799

*In addition, there are 206 participants entitled to deferred annual benefits totaling \$4,718,958.

3. Table 1 of Schedule F shows a reconciliation of the membership from June 30, 2017 to June 30, 2018. Tables 2, 3, 4 and 5 of Schedule F show the distribution by age and years of membership service of the number of active members included in the valuation by plan, while Tables 6, 7 and 8 show the number and annual benefits of retired members and beneficiaries included in the valuation by plan, distributed by age.



Section III – Assets

1. As of June 30, 2018, the total market value of assets amounted to \$1,191,573,647, as reported by the auditor. The estimated investment return on a market value basis for the plan year was 6.43%. Schedule C shows the receipts and disbursements of the System for the year preceding the valuation date and a reconciliation of the System balances at market value.
2. The market related actuarial value of assets using a 10-year smoothing technique of investment gains and losses is \$1,239,548,144. The estimated investment return for the plan year ending June 30, 2018 on an actuarial value of assets basis was 4.32%, which can be compared to the investment return assumed for the period of 7.00%. Schedule B shows the development of the actuarial value of assets as of June 30, 2018.



Section IV – Comments on Valuation

1. Schedule A of this report outlines the results of the actuarial valuation. The valuation was prepared in accordance with the actuarial assumptions and the actuarial cost method, which are described in Schedule D.
2. The valuation shows that the total actuarial accrued liability of the System amounts to \$1,720,462,405. Against these liabilities, the System has present assets for valuation purposes of \$1,239,548,144. When this amount is deducted from the actuarial accrued liability of \$1,720,462,405, there remains \$480,914,261 as the unfunded actuarial accrued liability.
3. The employer's contributions to the System consist of normal cost contributions and accrued liability contributions. The normal cost rate is equal to the actuarial present value of benefits accruing during the current year divided by the annual active members' payroll. Estimated budgeted administrative expenses are included in the normal cost rate. The administrative expenses for the fiscal year ending June 30, 2020 are estimated to be 0.55% of payroll. Therefore, the employer normal cost rate is determined to be 4.75% of payroll.
4. The accrued liability contribution rate is 17.08% of active member's compensation, which will amortize the unfunded actuarial liability over a weighted 20-year period on a level dollar amortization basis.
5. The total County contribution rate required for the fiscal year ending June 30, 2020 is, therefore, 21.83% of payroll.



Section IV – Comments on Valuation

6. The unfunded actuarial accrued liability (UAAL) decreased approximately \$9.4 million for the plan year ending June 30, 2018 and the funding ratio increased from 71.1% to 72.0%. This decrease in the UAAL was primarily due to the adoption of new assumptions and actuarial methods following the experience investigation which decreased the UAAL by approximately \$47.2 million. Offsetting much of this decrease was an increase in the UAAL of approximately \$32.1 million due to the investment return on an actuarial value basis for the year being less than expected (4.32% vs. 7.00%). In addition, the System experienced some losses due to higher salary increases than expected as well as other decrement experience. See Schedule G for a complete breakdown of the experience of the System.



Section V – Contributions Payable

The following table summarizes the employer contributions which were determined by the June 30, 2018 valuation and are recommended for use in the fiscal year ending June 30, 2020.

COUNTY ACTUARIALLY DETERMINED EMPLOYER CONTRIBUTIONS (ADEC) FOR FISCAL YEAR ENDING JUNE 30, 2020

CONTRIBUTION	PERCENTAGE OF ACTIVE MEMBERS' COMPENSATION	ESTIMATED DOLLARS BASED ON CURRENT PAYROLL
Normal Cost	4.75%	\$ 12,073,630
Accrued Liability	<u>17.08</u>	<u>43,414,230</u>
Total	21.83%	\$ 55,487,860



Section VI – Accounting Information

Governmental Accounting Standards Board Statements (GASB) has issued Statements No. 67 and 68 which replaced Statement No. 25 and 27 for plan years beginning after June 15, 2013. The information required under the new GASB Statements will be issued in separate reports. The following information is provided for informational purposes only.

1. The following is a distribution of the number of employees by type of membership, as follows:

NUMBER OF ACTIVE AND RETIRED PARTICIPANTS AS OF JUNE 30, 2018

GROUP	PLAN B	PLAN A	PLAN C	PLAN D	TOTAL
Retired participants and beneficiaries currently receiving benefits	888	1,956	1,061	0	3,905
Terminated participants and beneficiaries entitled to benefits but not yet receiving benefits	0	150	53	3	206
Terminated participants entitled to a refund of contributions	0	29	86	245	360
County to City Transfers	0	160	12	2	174
Active Participants	<u>4</u>	<u>1,245</u>	<u>1,911</u>	<u>1,886</u>	<u>5,046</u>
Total	892	3,540	3,123	2,136	9,691



Section VI – Accounting Information

2. Another such item is the schedule of funding progress as shown below.

SCHEDULE OF FUNDING PROGRESS
Dollar Amounts in Thousands

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) PUC (b)	Unfunded AAL (UAAL) (b - a)	Funded Ratio (a / b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll ((b - a) / c)
6/30/2013#	\$1,118,965	\$1,280,073	\$161,108	87.4%	\$250,367	64.3%
6/30/2014	1,155,350	1,398,658	243,308	82.6	240,466	101.2
6/30/2015#	1,192,702	1,509,224	316,522	79.0	243,655	129.9
6/30/2016#	1,206,907	1,648,669	441,762	73.2	244,818	180.4
6/30/2017	1,209,053	1,699,338	490,285	71.1	245,415	199.8
6/30/2018#	1,239,548	1,720,462	480,914	72.0	254,182	189.2

Reflects changes in assumptions.

3. Another such item is the schedule of employer contributions as shown below.

SCHEDULE OF EMPLOYER CONTRIBUTIONS

FISCAL YEAR ENDING	ESTIMATED ANNUAL REQUIRED CONTRIBUTION	PERCENT CONTRIBUTED
6/30/2013	\$31,825,727	100%
6/30/2014	32,982,757	100
6/30/2015	33,220,088	100
6/30/2016	32,113,026	100
6/30/2017	38,667,995	100
6/30/2018	51,289,266	100
6/30/2019	55,831,986	N/A



Section VI – Accounting Information

4. Additional information as of June 30, 2018 follows:

Valuation date	6/30/2018
Actuarial cost method	Entry Age Normal
Amortization period	Level dollar, closed
Remaining amortization period*	20 years
Asset valuation method	Ten-year smoothed market value
Actuarial assumptions:	
Investment rate of return (includes inflation)	7.00%
Projected salary increases	2.75% - 5.25%
Cost-of-living adjustments	CPI-U up to 1% for Plan B; CPI-U up to 4% for Plan A and Plan C; CPI-U up to 2% for Plan D;

* This period is a weighted average of the amortization for Plan C (8 years) and the amortization of the remaining portion of the unfunded accrued liability (22 years).



Section VII – Experience

Actual experience will never (except by coincidence) coincide exactly with assumed experience. It is assumed that gains and losses will be in balance over a period of years, but sizable year to year fluctuations are common. Detail on the derivation of the experience gain/(loss) for the year ended June 30, 2018 is shown below.

	<u>\$ Thousands</u>
(1) UAAL* as of June 30, 2017	\$ 490,284.6
(2) Total normal cost from last valuation	25,708.9
(3) Total actual contributions	69,564.6
(4) Administrative expenses	1,129.0
(5) Interest accrual: $\{[(1) + (2)] \times .07\} - \{[(3) - (4)] \times .03441\}$	<u>33,764.7</u>
(6) Expected UAAL before changes: (1) + (2) – (3) + (4) + (5)	\$ 481,322.6
(7) Change due to plan amendments	0.0
(8) Change due to actuarial assumptions or methods	<u>(47,234.9)</u>
(9) Expected UAAL after changes: (6) + (7) + (8)	\$ 434,087.7
(10) Actual UAAL as of June 30, 2018	\$ 480,914.3
(11) Gain/(loss): (9) – (10)	\$ (46,826.6)
(12) Gain/(loss) as percent of actuarial accrued liabilities for prior year (\$1,699,337.9)	(2.8)%

*Unfunded actuarial accrued liability.

Valuation Date June 30	Actuarial Gain/(Loss) as a % of Beginning Accrued Liabilities
2014	(0.6)%
2015	(1.3)%
2016	(2.5)%
2017	(2.9)%
2018	(2.8)%



Schedule A – Valuation Results

VALUATION RESULTS AS OF JUNE 30, 2018

(1)	Actuarial Accrued Liability:	
(a)	Plan B	
(i)	Actives and Transfers	\$ 3,281,089
(ii)	Retired, Beneficiaries, Disabled, Terminated	<u>187,064,670</u>
(iii)	Total = (i) + (ii)	\$ 190,345,759
(b)	Plan A	
(i)	Actives and Transfers	\$ 285,546,342
(ii)	Retired, Beneficiaries, Disabled, Terminated	<u>371,383,746</u>
(iii)	Total = (i) + (ii)	\$ 656,930,088
(c)	Plan C	
(i)	Actives and Transfers	\$ 446,028,951
(ii)	Retired, Beneficiaries, Disabled, Terminated	<u>395,007,690</u>
(iii)	Total = (i) + (ii)	\$ 841,036,641
(d)	Plan D	
(i)	Actives and Transfers	\$ 30,962,062
(ii)	Retired, Beneficiaries, Disabled, Terminated	<u>1,187,855</u>
(iii)	Total = (i) + (ii)	\$ 32,149,917
(e)	Total = (a)iii + (b)iii + (c)iii + (d)iii	\$ 1,720,462,405
(2)	Actuarial Value of Assets	\$ 1,239,548,144
(3)	Unfunded Actuarial Accrued Liability: (1(e) – 2)	\$ 480,914,261



Schedule B – Development of the Actuarial Value of Assets

(1)	Actuarial Value of Assets as of June 30, 2017	\$ 1,209,053,313
(2)	Market Value of Assets as of June 30, 2018	\$ 1,191,573,647
(3)	Market Value of Assets as of June 30, 2017	\$ 1,140,289,440
(4)	Net Cash Flow During Plan Year	
(a)	Contributions	\$ 69,564,619
(b)	Benefit Payments	(89,755,653)
(c)	Administration Expenses	<u>(1,129,015)</u>
(d)	Net Cash Flow: (a) + (b) + (c)	\$ (21,320,049)
(5)	Investment Income	
(a)	Market Total: (2) – (3) – (4)d	\$ 72,604,256
(b)	Assumed Rate	7.00%
(c)	Amount for Immediate Recognition	\$ 79,086,680
(d)	Amount for Phased-In Recognition: (5)a – (5)c	\$ (6,482,424)
(6)	Recognized Amounts for Plan Year	
(a)	Current Year: 0.10 x (5)d	\$ (648,242)
(b)	First Prior Year	4,548,463
(c)	Second Prior Year	(11,328,646)
(d)	Third Prior Year	(8,343,352)
(e)	Fourth Prior Year	7,712,483
(f)	Fifth Prior Year	4,391,650
(g)	Sixth Prior Year	(11,572,814)
(h)	Seventh Prior Year	12,045,965
(i)	Eighth Prior Year	5,330,118
(j)	Ninth Prior Year	<u>(29,407,425)</u>
(k)	Total Recognized Investment Gain/(Loss)	\$ (27,271,800)
(7)	Actuarial Value of Assets as of June 30, 2018 (1) + (4)d + (5)c + (6)k	\$ 1,239,548,144
(8)	Rate of Return on Actuarial Value	4.32%



Schedule C – Asset Information

<i>Receipts</i>	
(1) Employee Contributions	\$ 16,313,839
(2) Employer Contributions	53,250,780
(3) Investment Income	<u>72,604,256</u>
(4) Total Receipts	\$ 142,168,875
<i>Disbursements</i>	
(5) Retirement	\$ 83,006,953
(6) Refunds and Cashouts	6,748,700
(7) Administrative Expenses	<u>1,129,015</u>
(8) Total Disbursements	\$ 90,884,668
(9) Excess of Receipts Over Disbursements: (4) - (8)	\$ 51,284,207
<i>Reconciliation of Asset Balances</i>	
(10) Market Value at June 30, 2017	\$1,140,289,440
(11) Excess of Receipts Over Disbursements	<u>51,284,207</u>
(12) Market Value at June 30, 2018	\$1,191,573,647
(13) Estimated Rate of Return on Market Value of Assets	6.43%



Schedule D – Outline of Actuarial Assumptions and Methods

Actuarial assumptions and methods adopted by the Board October 2, 2018.

INVESTMENT RATE OF RETURN: 7.00% per year (net of investment expenses only), including price inflation at 3.00% per annum.

SALARY INCREASES:

Service	Increase per year
Less than 5	5.25%
5-9	4.25
10-14	3.75
15-19	3.50
20-24	3.25
25 or more	2.75

EXPENSES: Estimated budgeted administrative expenses of 0.55% of payroll are added to the normal cost rate.

COST-OF-LIVING ADJUSTMENT: 1.00% per year, compounded for Plan B. 2.75% per year, compounded for Plan A and Plan C. 2.00% per year, compounded for Plan D.

DEATH ASSUMPTION: 90% of active member deaths are assumed to occur as a result of non-hazardous duty and 10% of active member deaths are assumed to occur as a result of hazardous duty.

PERCENT MARRIED: 65% of male active members and 40% of female active members are assumed to be married with the male three years older than his spouse.

ASSETS: Actuarial value, as developed in Schedule C. The actuarial value of assets recognizes a portion of the difference between the market value of assets and the expected market value of assets, based on the assumed valuation rate of return. The amount recognized each year is 10% of the difference between market value and expected market value.

VALUATION METHOD: Entry Age Normal actuarial cost method.



Schedule D – Outline of Actuarial Assumptions and Methods

RATES OF WITHDRAWAL AND DISABILITY: Representative values of the assumed rates of withdrawal and disability are as follows:

Age	Annual Rate of			
	Withdrawal			Disability
	Less than 4 years of service	4 to 7 years of service	8 or more years of service	
20	15.0%	15.0%	10.0%	0.12%
25	15.0	15.0	10.0	0.12
30	13.0	10.0	10.0	0.12
35	12.0	8.5	6.0	0.12
40	11.0	7.0	5.0	0.17
45	10.0	5.0	4.0	0.22
50	9.0	4.5	3.5	0.27
55	8.0	4.5	3.5	0.32
60	8.0	4.5	3.5	0.37
65	8.0	4.5	3.5	0.42

RATES OF RETIREMENT: Representative values of the assumed rates of retirement are as follows:

Plan B

Age	Non-Public Safety	Public Safety
60	20.00%	100.0%
61	5.00	100.0
62	7.50	100.0
63	5.00	100.0
64	5.00	100.0
65	100.00	100.0



Schedule D – Outline of Actuarial Assumptions and Methods

Plan A

Age	0 – 7 years of service	8 or more years of service
55		7.5%
56		6.5
57		6.0
58		6.5
59		7.0
60		7.5
61		8.5
62		12.5
63		11.0
64		14.0
65	22.0%	22.0
66	20.0	20.0
67	20.0	20.0
68	20.0	20.0
69	20.0	20.0
70	100.0	100.0

Plan C

Age	Non-Public Safety			Public Safety		
	0 – 7 years of service	8 – 24 years of service	25 or more years of service	0 – 7 years of service	8 – 24 years of service	25 or more years of service
50			18.0%			16.0%
55		7.0%	18.0		7.0%	16.0
56		6.0	18.0		6.0	16.0
60		7.5	18.0		10.0	20.0
61		10.0	18.0		11.0	20.0
62		11.0	18.0		11.0	20.0
63		11.0	18.0		11.0	20.0
64		11.0	21.5		11.0	20.0
65	15.0%	15.0	25.0		11.0	20.0
66	12.0	12.0	25.0	100.0%	100.0	100.0
70	100.0	100.0	100.0	100.0	100.0	100.0



Schedule D – Outline of Actuarial Assumptions and Methods

Plan D

Age	Non-Public Safety	Public Safety	
		Less than 20 years of service	20 or more years of service
50			7.0%
51			6.0
55		10.0%	16.0
56		11.0	16.0
60		11.0	20.0
62	11.0%	11.0	20.0
65	15.0	100.0	100.0
66	12.0	100.0	100.0
67	40.0	100.0	100.0
70	100.0	100.0	100.0

RATES OF DEATHS BEFORE RETIREMENT: The RP-2014 Mortality Table with Blue Collar Adjustment and projected to 2020 with projection scale MP-2017 is used for both males and females while in active service. Representative values of the assumed rates of death while in active service are as follows:

Age	Male	Female
20	0.0486%	0.0186%
25	0.0630	0.0208
30	0.0653	0.0262
35	0.0788	0.0371
40	0.0908	0.0510
45	0.1280	0.0752
50	0.2137	0.1204
55	0.3590	0.1969
60	0.6311	0.3027
65	1.1325	0.4355



Schedule D – Outline of Actuarial Assumptions and Methods

RATES OF DEATH AFTER RETIREMENT: The RP-2014 Mortality Table with Blue Collar Adjustment and projected to 2020 with projection scale MP-2017, set forward two years for males and set forward three year for females, with rates at ages 70 and below adjusted by 125% for both males and females and rates at ages above 70 adjusted by 85% for females only is used for the period after retirement and for dependent beneficiaries. The RP-2014 Disabled Mortality Table projected to 2020 with projection scale MP-2017 is used for the period after disability retirement. There is a margin for future mortality improvement in the tables used by the System. Based on the results of the most recent experience study adopted by the Board on October 2, 2018, the numbers of expected future deaths are 7-11% less than the actual number of deaths that occurred during the study period for service retirements and beneficiaries. Representative values of the assumed rates of death after service and disability retirement are as follows:

Age	Annual Rate of Death After			
	Service Retirement		Disability Retirement	
	Male	Female	Male	Female
50	0.5843%	0.4434%	1.9977%	1.1596%
55	0.8686	0.6783	2.3252	1.5198
60	1.2970	0.9881	2.7672	1.8787
65	1.9648	1.4628	3.3502	2.1917
70	3.0106	2.3581	4.1376	2.8342
75	3.9060	2.7112	5.5115	4.1428
80	6.5624	4.7309	7.8620	6.3510
85	11.1563	8.3054	11.7706	9.7144



Schedule E – Summary of Main System Provisions – Plan B

Eligibility	All salaried employees hired prior to December 1, 1978 were eligible at date of employment and had to apply for membership as a condition of such employment. "Employee" means any person employed on a regular full-time basis, excluding officials or employees of the Board of Education of Shelby County. Entry in the System was optional for individuals employed on a per diem basis. Employees not able to complete the required number of years of service prior to mandatory retirement age could not join the plan.
Final Average Earnings	<p>If a participant had 10 years of credited service on October 1, 1977, the greater of:</p> <ol style="list-style-type: none">1) Average monthly earnings for the five consecutive years of County Service during which earnings was the highest or,2) Average monthly earnings for the 12 months preceding the date of retirement. <p>If the participant did not have 10 years of service on October 1, 1977, the average monthly earnings for the 36 consecutive months during which the employee received his highest earnings.</p>
Normal Retirement Benefit	
Eligibility	25 years of credited service or age 60 (age 55 if Deputy Sheriff) and 10 years of credited service.
Benefit	2.7% of final average earnings multiplied by years of credited service not in excess of 25 plus 1% of final average earnings multiplied by years of credited service greater than 25 but less than 35. The maximum benefit is 77.5% of final average earnings. The minimum monthly benefit is \$300 (\$150 monthly if jointly employed by the City and County).
Disability Retirement	
Eligibility	After January 1, 2007, only participants who are disabled in the line-of-duty are eligible to receive a disability pension.
Benefit	The greater of: <ol style="list-style-type: none">1) The Normal Retirement Benefit (if participant is then eligible for a Normal Retirement Benefit) or,2) 50% of Final Average Earnings.
Termination of Employment	If employment is terminated prior to the completion of 10 years of credited service, a refund of the participant's contributions, without interest, is payable.



Schedule E – Summary of Main System Provisions – Plan B

Death Benefit	<p>If employment is terminated after completion of 10 years of credited service, a deferred vested benefit equal to the participant's accrued benefit at date of termination is paid commencing at age 60. Benefits are payable to the surviving spouse after age 60 of the participant. The participant may elect to withdraw his contributions, without interest, instead of receiving the deferred monthly benefit at age 60.</p> <p>If a participant dies before completing 10 years of credited service and does not die in line-of-duty, his beneficiary will receive a refund of the participant's contributions, without interest.</p> <p>If a participant dies after completing 10 years of credited service or after retirement the member's eligible spouse will receive the participant's accrued benefit until death.</p> <p>If death occurs in line-of-duty, a benefit of 50% of the participant's final average earnings will be paid to the spouse until death.</p>
Contributions	<p>Each year the County contributes an amount determined actuarially to sustain the plan on an actuarially determined funding basis. Employees contribute 8% of earnings to the retirement plan for the first 35 years. After 35 years, employees contribute 8% of any increases in pay.</p>
Cost of Living Adjustment	<p>A maximum of 1% annual adjustment based on CPI changes for the following:</p> <ol style="list-style-type: none">1) Retired participants who have attained age 65, completed 25 years of credited service prior to termination, have been retired and receiving benefits for 5 years, and have a monthly pension for the first month in which they are eligible for the COLA less than \$3,000.2) Disability retired participants who have a monthly pension for the first month in which they are eligible for the COLA less than \$3,000.3) Surviving Spouses who have attained age 65, where the original participant completed 25 years of credited service prior to termination or whose death was a line of duty death or whose pension had been a disability pension, where the original participant's termination was at least 5 years prior to receiving the COLA, and who have a monthly pension for the first month in which they are eligible for the COLA less than \$3,000.4) Surviving children where the original participant completed 25 years of credited service prior to termination or whose death was a line of duty death or whose pension had been a disability pension, where the participant's termination was at least 5 years prior to receiving the COLA, and who have a monthly pension for the first month in which they are eligible for the COLA less than \$3,000. <p>In no event, however, will the Plan B benefits exceed 100% of final average pay.</p>



Schedule E – Summary of Main System Provisions – Plan A

Eligibility All employees hired after December 1, 1978 and prior to March 1, 2005 including all full-time, part-time and elected employees, and members of Plan B electing to transfer to Plan A and employees of all joint City/County agencies administered by Shelby County participate. CETA employees, Board of Education employees, employees electing Social Security coverage, and Joint City/County agencies not administered by Shelby County cannot participate.

Public Safety Employees Public Safety Employees, hired prior to March 1, 2005, who did not elect to transfer to Plan C, effective September 1, 2005, are no longer eligible to retire under the 25 year-and-out program and no longer contribute to Plan A.

Final Average Earnings The average over the three highest consecutive years of earnings.

Normal Retirement Benefit

Eligibility Age 65 regardless of amount of credited service.

Benefit Final average earnings multiplied by a percentage from Table A, which is included in the appendix to the plan. Listed below is a summary of Table A:

Years of Service	Benefit Accrual Per Year
1 – 7	1.5%
8 – 13	2.0
14 – 20	2.5
21 – 25	3.0
26 – 30	3.0
31 – 35	2.5
36 – 38	2.5
39 and above	0.0

Early Retirement Benefit

Eligibility Age 55 and completion of 7.5 years of credited service.

Benefit The Normal Retirement Benefit reduced 2.5% for each year less than age 65.

Disability Retirement

Eligibility After January 1, 2002, no disability benefits are provided by the Plan. Upon reaching age 65, a disabled participant will have any disability benefit recomputed as a normal retirement benefit payable by the Plan.



Schedule E – Summary of Main System Provisions – Plan A

Benefit	The Normal Retirement Benefit calculated with credited service including time while disabled.
Termination of Employment	<p>If employment is terminated prior to the completion of 7.5 years of credited service, no benefit is payable.</p> <p>If employment is terminated after completion of 7.5 years of credited service, a deferred vested benefit equal to the participant's accrued benefit at date of termination is paid commencing at age 65. Alternatively, the participant may elect a vested early benefit payable beginning at age 55 which is actuarially equivalent.</p>
Death Benefit	<p>If a participant dies, the participant's eligible spouse shall receive 45% of final average earnings for two years after the participant's death.</p> <p>If death occurs in line-of-duty, or, if not line-of-duty, the participant before death was age 55 and completed 15 years of credited service, the participant's eligible spouse shall receive 75% of the participant's pension calculated as if the participant had retired immediately before death. This benefit shall be payable when the spouse reaches age 65. The participant's final average earnings is adjusted by the COLA from the participant's death until the spouse reaches age 65.</p>
Contributions	Employees contribute 0.5% of earnings in 2011, 1.0% of earnings in 2012, 1.5% of earnings in 2013 and 2.0% of earnings in 2014 and thereafter.
Cost of Living Adjustment	<p>A maximum of 4% annual adjustment based on CPI changes applies to the following benefits:</p> <ol style="list-style-type: none">1) Retired participants after age 652) Disabled participants3) Survivor benefits for dependent children4) Survivor benefits for spouses under age 65 receiving the two year temporary benefit5) Survivor benefits for spouses age 65 and over. <p>In no event, however, will the Plan A benefits exceed 100% of final average pay except as follows for an employee who retires with 40 or more years of service:</p>

Final Average Earnings	Maximum Benefit
Less than \$1,200	124%
\$1,200 to \$2,800	115%
More than \$2,800	106%



Schedule E – Summary of Main System Provisions – Plan C

Eligibility	All employees participate who are hired on or after March 1, 2005 but before July 1, 2011, including all full-time, part-time and elected employees, and employees of all joint City/County agencies administered by Shelby County, and members of Plan A electing to transfer to Plan C. CETA employees, Board of Education employees, employees electing Social Security coverage, and Joint City/County agencies not administered by Shelby County cannot participate.
Final Average Earnings	The average over the three highest consecutive years of earnings.
Alternate Benefit Accrual Account	Participants contribute 6% of earnings prior to 2011, 6.5% of earnings in 2011, 7.0% of earnings in 2012, 7.5% of earnings in 2013 and 8.0% of earnings in 2014 and thereafter to fund the Plan. Participants are always fully vested in these contributions. Prior to January 1, 2011, the employer matches 50% of each contribution the participant makes to the plan. Effective January 1, 2011, employer matching contributions are frozen at 3%. The participant becomes fully vested in the employer contributions upon reaching 7.5 years of credited service. The total of these two contribution amounts will comprise the participant's Alternate Benefit Accrual Account. The investment return on these contributions and match is 2% per annum.
Normal Retirement Benefit	
Eligibility	Age 65 or upon completion of 25 years of credited service.
Benefit	The greater of: 1) 2.35% of final average earnings multiplied by credited service (up to 35 years) or, 2) The life annuity equivalent of the participant's Alternate Benefit Accrual Account.
Early Retirement Benefit	
Eligibility	Age 55 and completion of 7.5 years of credited service.
Benefit	The greater of: 1) Final average earnings multiplied by credited service (up to 35 years) and a percentage from Table ERP, which is included as part of the plan, or 2) The life annuity equivalent of the participant's Alternate Benefit Accrual Account.



Schedule E – Summary of Main System Provisions – Plan C

Disability Retirement

Eligibility No disability benefits are provided by the Plan except for transfers. Upon reaching age 65, a disabled participant will have any disability benefit recomputed as a normal retirement benefit payable by the Plan.

Benefit The Normal Retirement Benefit calculated with credited service including time while disabled.

Termination of Employment

If employment is terminated prior to the completion of 7.5 years of credited service, the participant is entitled to receive the vested portion of the participant's alternate benefit accrual account as a lump sum payment.

If employment is terminated after completion of 7.5 years of credited service, a deferred vested benefit equal to the participant's accrued benefit at date of termination is paid commencing at age 65. Alternatively, the participant may elect a vested early benefit payable beginning at age 55 which is actuarially equivalent.

Death Benefit

If a participant dies before completion of 15 years of credited service and the death occurs in line-of-duty, or, if not line of duty, the participant had completed 7.5 years of credited service before death, the participant's eligible beneficiary shall receive the vested portion of the participant's alternate benefit accrual account as a lump sum payment.

If a participant dies after completion of 15 years of credited service the participant's eligible spouse shall receive 75% of the participant's pension calculated as if the participant had retired immediately before death. This benefit shall be payable when the spouse reaches age 65. The participant's final average earnings is adjusted by the COLA from the participant's death until the spouse reaches age 65.

Contributions

See Alternate Benefit Accrual Account.

Cost of Living Adjustment

A maximum of 4% annual adjustment based on CPI changes applies to the following benefits:

- 1) Retired participants after age 65
- 2) Disabled participants
- 3) Survivor benefits for dependent children
- 4) Survivor benefits for spouses age 65 and over.

In no event, however, will the Plan C benefits exceed 100% of final average pay.



Schedule E – Summary of Main System Provisions – Plan D

Eligibility	All employees participate who are hired on or after July 1, 2011, including all full-time, part-time and elected employees, and employees of all joint City/County agencies administered by Shelby County. CETA employees, Board of Education employees, employees electing Social Security coverage, and Joint City/County agencies not administered by Shelby County cannot participate.
Final Average Earnings	The average over the 5 highest consecutive years of earnings.
Normal Retirement Benefit	
Eligibility	Age 67 with at least 7.5 years of credited service for general employees and age 55 with at least 7.5 years of credited service for public safety employees.
Benefit	Final average earnings multiplied by credited service multiplied by 2.175%.
Early Retirement Benefit	
Eligibility	Age 62 with at least 7.5 years of credited service for general employees and age 50 with the last 20 years of credited service being in a public safety classification for public safety employees.
Benefit	Final average earnings multiplied by credited service and a percentage from Table ERP-S and Table ERP-PS, which is included as part of the plan.
Disability Retirement	
Eligibility	No disability benefits are provided by the Plan except for transfers. Upon reaching age 65, a disabled participant will have any disability benefit recomputed as a normal retirement benefit payable by the Plan.
Benefit	The Normal Retirement Benefit calculated with credited service including time while disabled.
Termination of Employment	
	If employment is terminated prior to the completion of 7.5 years of credited service, the participant is entitled to receive the vested portion of the participant's alternate benefit accrual account as a lump sum payment.
	For general employees, if employment is terminated after completion of 7.5 years of credited service, a deferred vested benefit equal to the participant's accrued benefit at date of termination is paid commencing at age 67. Alternatively, the participant may elect a vested early benefit payable beginning at age 62 which is actuarially equivalent.



Schedule E – Summary of Main System Provisions – Plan D

For public safety employees, if employment is terminated after completion of 7.5 years of credited service, a deferred vested benefit equal to the participant's accrued benefit at date of termination is paid commencing at age 55. Alternatively, the participant may elect a vested early benefit payable beginning at age 50 which is actuarially equivalent.

Death Benefit

If a participant dies before completion of 15 years of credited service and the death occurs in line-of-duty, or, if not line of duty, the participant had completed 7.5 years of credited service before death, the participant's eligible beneficiary shall receive the amount of the participant contribution account.

If a participant dies after completion of 15 years of credited service the participant's eligible spouse shall receive 75% of the participant's pension calculated as if the participant had retired immediately before death. This benefit shall be payable when the spouse reaches age 67. The participant's final average earnings is adjusted by the COLA from the participant's death until the spouse reaches age 67.

Contributions

Employees contribute 8.0% of earnings.

Cost of Living Adjustment

A maximum of 2% annual adjustment based on CPI changes applies to the following benefits:

- 1) Retired participants after age 65
- 2) Disabled participants
- 3) Survivor benefits for dependent children
- 4) Survivor benefits for spouses age 65 and over.

In no event, however, will the Plan D benefits exceed 100% of final average pay.



Schedule F – Tables of Membership Data

**TABLE 1
RECONCILIATION OF DATA**

	<u>Actives</u>	<u>County to City Transfers</u>	<u>Retirees</u>	<u>Disabled</u>	<u>Beneficiaries</u>	<u>Vested Terms</u>	<u>Total</u>
1. Headcounts as of June 30, 2017	5,011	180	3,154	55	592	207	9,199
2. Change in status during the year:							
a. Death	(13)		(96)	(3)	(29)	(4)	(145)
c. Disabled							
d. Retired	(161)	(4)	193	(4)		(24)	
e. Terminated Vested	(25)					25	
f. Terminated Not Vested	(269)	(2)					(271)
g. Benefits Expired/Refund					(11)	(3)	(14)
h. Transfer to/from City							
3. New member due to:							
a. New Hires	487						487
b. Rehires	16		(3)			(1)	12
c. Death of Participant					52		52
d. Adjustments			6		(1)	6	11
4. Headcounts as of June 30, 2018	5,046	174	3,254	48	603	206	9,331

In addition, there are 360 terminated participants entitled to a refund of contributions.



Schedule F – Tables of Membership Data

TABLE 2

PLAN B

**SCHEDULE OF ACTIVE MEMBERS BY AGE AND SERVICE
AS OF JUNE 30, 2018**

Attained Age	Completed Years of Service										Total	
	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	≥ 40		
Under 25 Avg. Pay												
25 to 29 Avg. Pay												
30 to 34 Avg. Pay												
35 to 39 Avg. Pay												
40 to 44 Avg. Pay												
45 to 49 Avg. Pay												
50 to 54 Avg. Pay												
55 to 59 Avg. Pay												
60 to 64 Avg. Pay											2 65,207	2 65,207
65 to 69 Avg. Pay											1 172,737	1 172,737
70 & up Avg. Pay											1 108,303	1 108,303
Total Avg. Pay											4 102,863	4 102,863

Average Age 67.0

Average Service 43.9



Schedule F – Tables of Membership Data

TABLE 3

PLAN A

**SCHEDULE OF ACTIVE MEMBERS BY AGE AND SERVICE
AS OF JUNE 30, 2018**

Attained Age	Completed Years of Service										Total
	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	≥ 40	
Under 25 Avg. Pay											
25 to 29 Avg. Pay											
30 to 34 Avg. Pay											
35 to 39 Avg. Pay				3 42,464	10 37,965						13 39,003
40 to 44 Avg. Pay				13 48,171	85 50,722	12 51,710					110 50,528
45 to 49 Avg. Pay				10 48,366	129 51,640	56 51,902	15 48,188				210 51,307
50 to 54 Avg. Pay				14 50,742	109 51,065	71 51,927	46 47,944	9 47,615			249 50,591
55 to 59 Avg. Pay				13 50,572	99 47,794	86 48,936	54 53,137	21 57,071	7 47,666	1 57,795	281 50,025
60 to 64 Avg. Pay				5 57,746	53 52,489	55 51,514	40 56,259	27 60,344	15 57,592	2 48,585	197 54,541
65 to 69 Avg. Pay				7 52,093	33 53,240	36 47,220	31 57,270	16 54,913	10 49,964	2 56,500	135 52,504
70 & up Avg. Pay				2 81,412	14 58,886	8 54,461	13 58,811	7 77,624	5 70,797	1 29,380	50 62,284
Total Avg. Pay				67 51,064	532 50,777	324 50,590	199 53,206	80 58,478	37 55,437	6 49,557	1,245 51,760

Average Age 55.4

Average Service 21.3



Schedule F – Tables of Membership Data

TABLE 4

PLAN C

**SCHEDULE OF ACTIVE MEMBERS BY AGE AND SERVICE
AS OF JUNE 30, 2018**

Attained Age	Completed Years of Service										Total	
	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	≥ 40		
Under 25 Avg. Pay												
25 to 29 Avg. Pay		2 47,026	1 58,428									3 50,826
30 to 34 Avg. Pay		1 34,144	43 48,795	18 48,447								62 48,458
35 to 39 Avg. Pay		1 27,301	61 51,251	89 50,071	26 53,579	1 60,775						178 50,920
40 to 44 Avg. Pay		1 40,783	47 51,016	98 54,505	77 53,535	34 60,506						257 54,317
45 to 49 Avg. Pay		2 29,390	53 47,334	119 53,782	81 51,005	109 59,849	29 64,083					393 54,659
50 to 54 Avg. Pay			38 49,108	83 48,721	47 47,215	91 56,273	94 61,844	35 64,421	1 33,061			389 54,887
55 to 59 Avg. Pay		1 32,448	33 51,887	60 46,236	26 48,260	54 56,926	59 58,319	50 64,003	10 71,080	1 59,866		294 55,304
60 to 64 Avg. Pay			26 46,584	67 55,103	12 58,386	28 56,564	23 58,976	38 65,398	16 70,882	4 79,737		214 58,327
65 to 69 Avg. Pay			11 77,827	27 60,265	12 69,648	15 72,705	3 83,038	10 59,080	10 87,735			88 69,624
70 & up Avg. Pay			9 54,164	11 59,116	5 97,746	2 48,745	3 76,489	1 123,466	1 58,914	1 32,646		33 65,711
Total Avg. Pay		8 35,938	322 50,691	572 52,198	286 52,957	334 58,707	211 61,363	134 64,584	38 74,059	6 68,576		1,911 55,494

Average Age 50.5

Average Service 17.3



Schedule F – Tables of Membership Data

TABLE 5

PLAN D

**SCHEDULE OF ACTIVE MEMBERS BY AGE AND SERVICE
AS OF JUNE 30, 2018**

Attained Age	Completed Years of Service										Total
	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	≥ 40	
Under 25	40	62									102
Avg. Pay	36,901	36,258									36,510
25 to 29	69	287	44								400
Avg. Pay	34,331	39,557	44,765								39,229
30 to 34	40	239	108								387
Avg. Pay	40,184	42,019	49,617								43,949
35 to 39	30	156	74								260
Avg. Pay	43,247	45,303	44,792								44,921
40 to 44	14	106	51								171
Avg. Pay	49,669	45,330	48,609								46,663
45 to 49	23	122	45								190
Avg. Pay	36,657	45,028	50,599								45,334
50 to 54	12	102	37								151
Avg. Pay	59,623	47,281	44,989								47,700
55 to 59	13	67	32								112
Avg. Pay	39,754	48,138	48,260								47,200
60 to 64	4	47	17								68
Avg. Pay	43,923	45,055	43,505								44,601
65 to 69	3	18	15								36
Avg. Pay	34,788	70,410	70,556								67,503
70 & up		3	6								9
Avg. Pay		100,159	55,374								70,302
Total	248	1,209	429								1,886
Avg. Pay	39,518	43,625	48,340								44,157

Average Age 38.6

Average Service 2.8



Schedule F – Tables of Membership Data

TABLE 6

PLAN B

**SCHEDULE OF RETIRED MEMBERS AND BENEFICIARIES
AS OF JUNE 30, 2018**

Attained Age	Number of Members	Total Annual Benefits	Average Annual Benefit
Under 50	-	\$ -	\$ -
50 – 54	2	21,704	10,852
55 – 59	11	299,018	27,183
60 – 64	51	1,525,023	29,902
65 – 69	125	3,860,258	30,882
70 – 74	189	5,361,281	28,367
75 – 79	167	4,185,072	25,060
80 – 84	132	3,063,287	23,207
85 – 89	113	2,014,933	17,831
90 & Over	98	1,353,647	13,813
Total	888	\$ 21,684,223	\$ 24,419



Schedule F – Tables of Membership Data

TABLE 7

PLAN A

**SCHEDULE OF RETIRED MEMBERS AND BENEFICIARIES
AS OF JUNE 30, 2018**

<u>Attained Age</u>	<u>Number of Members</u>	<u>Total Annual Benefits</u>	<u>Average Annual Benefit</u>
Under 50	31	\$ 561,875	\$ 18,125
50 – 54	14	115,149	8,225
55 – 59	86	1,158,638	13,473
60 – 64	251	3,783,875	15,075
65 – 69	472	8,649,364	18,325
70 – 74	456	8,405,989	18,434
75 – 79	320	5,453,710	17,043
80 – 84	196	2,996,101	15,286
85 – 89	86	1,437,155	16,711
90 & Over	44	534,826	12,155
Total	1,956	\$ 33,096,682	\$ 16,921

In addition, there are 150 participants entitled to deferred annual benefits totaling \$3,123,733.



Schedule F – Tables of Membership Data

TABLE 8

PLAN C

**SCHEDULE OF RETIRED MEMBERS AND BENEFICIARIES
AS OF JUNE 30, 2018**

<u>Attained Age</u>	<u>Number of Members</u>	<u>Total Annual Benefits</u>	<u>Average Annual Benefit</u>
Under 50	20	\$ 492,660	\$ 24,633
50 – 54	111	3,159,161	28,461
55 – 59	240	6,570,228	27,376
60 – 64	326	9,694,948	29,739
65 – 69	257	7,597,997	29,564
70 – 74	81	2,073,921	25,604
75 – 79	18	328,596	18,255
80 – 84	7	136,014	19,431
85 – 89	1	8,369	8,369
90 & Over	-	-	-
Total	1,061	\$ 30,061,894	\$ 28,334

In addition, there are 53 participants entitled to deferred annual benefits totaling \$1,520,645.



Schedule G – Analysis of Financial Experience

**Gains & Losses in Accrued Liabilities
Resulting from Difference Between
Assumed Experience & Actual Experience
(\$ Thousands)**

Type of Activity	\$ Gain (or Loss) For Year Ending 6/30/2018	\$ Gain (or Loss) For Year Ending 6/30/2017
Age & Service Retirements. If members retire at older ages, there is a gain. If younger ages, a loss.	\$ 1,051.1	\$ 666.2
Disability Retirements. If disability claims are less than assumed, there is a gain. If more claims, a loss.	(1,115.2)	(477.2)
Death-in-Service Benefits. If survivor claims are less than assumed, there is a gain. If more claims, there is a loss.	546.0	810.9
Withdrawal From Employment. If more liabilities are released by withdrawals than assumed, there is a gain. If smaller releases, a loss.	(1,890.7)	(1,253.6)
Pay Increases. If there are smaller pay increases than assumed, there is a gain. If greater increases, a loss.	(4,524.2)	5,122.9
New Members. Additional unfunded accrued liability will produce a loss.	(1,134.9)	(1,628.4)
Investment Income. If there is a greater investment income than assumed, there is a gain. If less income, a loss.	(32,085.3)	(51,355.4)
Death After Retirement. If retirants live longer than assumed, there is a loss. If not as long, a gain.	(1,722.1)	2,168.5
Other. Miscellaneous gains and losses resulting from changes in valuation software, data adjustments, timing of financial transactions, etc.	(5,951.3)	(2,284.8)
Gain (or Loss) During Year From Financial Experience	<u>\$ (46,826.6)</u>	<u>\$ (48,230.9)</u>
Non-Recurring Items. Adjustments for plan amendments, assumption changes, or method changes.	<u>47,234.9</u>	<u>0.0</u>
Composite Gain (or Loss) During Year	<u>\$ 408.3</u>	<u>\$ (48,230.9)</u>



Schedule H – 10-Year Projection of Funded Ratio and Employer Contribution Rates

The results of actuarial valuations are a “snapshot” of the financial position on the valuation date, based on the assumed number of active employees and current beneficiaries. Projections simulate future actuarial valuation results over a forecast period (ten years in this case) by “creating” future new hires and performing valuations using the projected membership. The following items are assumed for the projected results provided on the following page.

- Active Employee Growth Rate: 0%
- Valuation Discount Rate: 7.00%
- Investment Rate of Return: 7.00% each year
- Actuarial Value of Assets: 10 year smoothing, No Corridor
- Amortization Method: Level Dollar, Closed
- June 30, 2018 Amortization Period: Weighted 20-year period
- Future Contributions: Based on Expected Actuarially Determined Contributions

All other demographic and economic changes are assumed to occur in accordance with the actuarial assumptions used for the actuarial valuation.



Schedule H – 10-Year Projection of Funded Ratio and Employer Contribution Rates

