ARKANSAS DEPARTMENT OF TRANSPORTATION

Equipment and Procurement Division

Request for Proposals (RFP) No. 18-001P

Retirement Actuarial Services

Proposals must be submitted
No later than **2:00 p.m. CDT**
January 20, 2018

To constitute a valid submission, proposal must:

(1) Be submitted by the prescribed date and time (Paragraph 2.4);
(2) Address all of the requirements set forth herein;
(3) Contain Page 13, completed with the following information:
   a) company name, address, and phone number.
   b) original signature in ink, not photocopied or stamped.
(4) Contain Eligible Bidder Certification, Contract and Grant Disclosure and Certification Form and Restriction of Boycott of Israel Certification Form.
(5) Have Current DFA Illegal Immigrant Contractor Disclosure Certification.

For further information regarding this RFP contact
Danny Keene, Division Head
ArDOT - Equipment and Procurement Division
at 501-569-2672 or by e-mail at Danny.Keene@ardot.gov

Arkansas Department of Transportation
RFP No. 18-001P Retirement Actuarial Services

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ARKANSAS DEPARTMENT OF TRANSPORTATION
Equipment and Procurement Division

Request for Proposals No. 18-001P

Retirement Actuarial Services

Section 1.0 INTRODUCTION

1.1 **Scope:** The Arkansas State Highway Employees' Retirement System, hereinafter called "ASHERS" and "the System", is soliciting proposals for Actuarial Services. The System proposes to implement these services on July 1, 2018.

1.2 **Objectives:** The objective of procuring independent actuarial services is to provide independent conformation for the users of actuarial evidence.

1.3 **Term of Contract:** Will be for 1 year, July 1, 2018 - June 30, 2019, and may be amended for an additional six annual contracts. Pursuant to Ark. Code Ann, § 19-11-238 (c) (Supp.1997), the contract shall automatically terminate at the end of any fiscal year if funds have not been appropriated or are otherwise unavailable for the following year, in which case the successful Contractor shall be reimbursed only for any non-recurring cost that was incurred but not amortized in the contract price.

1.4 **Point of Contact:** This RFP is issued by the Arkansas Department of Transportation, Equipment and Procurement Division on behalf of the Arkansas State Highway Employees' Retirement System. Questions concerning submission of a proposal in response to this RFP should be addressed to the AHTD officials named below:

Bid Submission Questions
Danny Keene, Division Head
Equipment and Procurement Division
Arkansas Department of Transportation
P. O. Box 2261
Little Rock, AR 72203
Phone: 501-569-2672
Fax: 501-569-2679
E-Mail: Danny.Keene@ardot.gov

Technical Questions
Robyn Smith
ASHERS Executive Secretary
Arkansas Department of Transportation
P.O. Box 2261
Little Rock, AR 72203
Phone: 501-569-2411
Fax: 501-569-4955

Inquiries may be referred to other System employees for detailed answers or clarifications. Written inquiries are encouraged and will be responded to in writing. Oral communications shall not be binding on the System and can in no way modify the terms, conditions, or specifications of this RFP or relieve the successful Contractor of any obligations under any contract resulting from this RFP. In the event that it becomes necessary to provide additional clarifying data or information, or to revise any part of this RFP, revisions, amendments or supplements will be provided to all recipients of this initial RFP and all who have requested information in writing.

1.5 **Information Restrictions:** All information received by ASHERS regarding this RFP is restrictive and will not be available before award is made to the successful Contractor.

1.6 **<u>Choice of Law and Choice of Forum:</u>** This RFP and any resulting contract shall be governed by and construed in accordance with the laws of the State of Arkansas. Any proceeding relating to any cause of action of any nature arising from or related to the RFP or contract may be brought only before the appropriate forum in Pulaski County, Arkansas.

1.7 **<u>Ethics:</u>** *"It shall be a breach of ethical standards for a person to be retained, or to retain a person, to solicit or secure a State contract upon an agreement or understanding for a commission, percentage, brokerage, or contingent fee, except for retention of bona fide employees or bona fide established commercial selling agencies maintained by the contractor for the purpose of securing business."* Ark. Code Ann. §19-11-708(a).

1.8 **NOTICE OF NONDISCRIMINATION:** The Arkansas State Highway Commission, through ArDOT, complies with all civil rights provisions of federal statutes and related authorities that prohibit discrimination in programs and activities receiving federal financial assistance. Therefore, ArDOT does not discriminate on the basis of race, sex, color, age, national origin, religion (not applicable as a protected group under the Federal Motor Carrier Safety Administration Title VI Program), disability, Limited English Proficiency (LEP), or low-income status in the admission, access to and treatment in the ArDOT's programs and activities, as well as the ArDOT's hiring or employment practices. Complaints of alleged discrimination and inquiries regarding the ArDOT's nondiscrimination policies may be directed to Joanna P. McFadden Section Head – EEO/DBE (ADA/504/Title VI Coordinator), P. O. Box 2261, Little Rock, AR 72203, (501)569-2298, (Voice/TTY 711), or the following email address: **<u>joanna.mcfadden@ardot.gov.</u>** Free language assistance for Limited English Proficient individuals is available upon request. This notice is available from the ADA/504/Title VI Coordinator in large print, on audiotape and in Braille.

1.9 **PROHIBITION OF EMPLOYMENT OF ILLEGAL IMMIGRANTS:** Pursuant to Arkansas Code Annotated 19-11-105, all bidders must certify prior to award of a contract that they **<u>do not</u>** employ or contract with any illegal immigrant(s) in its contract with the state. Bidders shall certify online at https://www.ark.org/dfa/immigrant/index.php.

1.10 **DISCLOSURE:** Failure to make any disclosure required by Governor's Executive Order 98-04, or any violation of any rule, regulation, or policy adopted pursuant to that order, **shall** be a material breach of the terms of this contract. Any contractor, whether an individual or entity, who fails to make the required disclosure or who violates any rule, regulation, or policy **shall** be subject to all legal remedies available to the agency.

<u>Section 2.0 PREPARING AND SUBMITTING A PROPOSAL</u>

2.1 **<u>General Instructions:</u>** The evaluation and selection of a contractor and any resulting contract will be based on the information submitted in the Proposer's proposal plus references and any required on-site visits, oral presentations, or demonstrations. Failure to respond to each of the requirements in the RFP may be the basis for rejecting a response. Elaborate proposals beyond that sufficient to present a complete and effective proposal (such as those involving expensive artwork) are not necessary or desired.

2.2 **<u>Proposal Format:</u>** The proposal must be formatted and presented in the same order as listed below. The proposer should provide a detailed response to each specification listed.

2.2.1 **Technical Proposal**

Cover Letter – should state the RFP name and number; Proposer's name; Proposer's business address, telephone number, name of authorized contact person for proposal questions and authorized contact person for contract questions/negotiations. The cover letter must be dated and signed.

Table of Contents – clearly identify the material by section and page number.

Project Understanding – should provide a response in narrative form that convinces the evaluators that the proposer has a clear understanding of the background and of the proposed scope of work to be performed.

Requirements – provide a positive or negative conformation to each of the specifications contained in Section IV and a detailed response to each of the specifications contained in Section IV subsection 1.0 of this RFP.

Experience – provide a detailed response to each of the specifications contained in Section V of this RFP.

Cost Requirements – provide a detailed response to each of the specifications contained in Section VI of this RFP.

2.3 **Incurring Costs:** Neither the System nor the DF&A shall be liable for any cost incurred by proposers in replying to this RFP.

2.4 **Time and Place for Submission of Proposal:** Proposers must submit an original and two (2) copies of all materials required for acceptance of their proposal by **2:00 p.m. CDT on January 20, 2018.**

Mail To:	Deliver To:
Arkansas Department of Transportation	Arkansas Department of Transportation
Equipment and Procurement Division	Equipment and Procurement Division
P. O. Box 2261	11302 W. Baseline Road
Little Rock, AR 72203	Little Rock, AR 72209

2.5 **Late Proposals:** Proposals received after the date and hour established will be considered late proposals and will be automatically disqualified. Late proposals will be returned unopened.

2.6 **Unsigned Proposals:** Page 13 of the RFP must be signed, completed and included with proposal to constitute a valid submission. The signature must be legible, original (not stamped or photocopied) and in ink. Unsigned and improperly signed proposals will be automatically disqualified.

2.7 **Withdrawing or Modifying Proposals:** A proposal may be withdrawn, modified, or corrected by a Proposer after it has been submitted only if a written request to do so is filed with the Equipment and Procurement Division prior to the date and time set for opening. Telegrams or letters received before the date set for opening of proposals will be accepted and attached to the unopened proposal, and the proposal will be considered withdrawn, modified, or otherwise changed accordingly. No proposal may be withdrawn, modified, corrected, or otherwise changed after the date and time set for opening.

2.8 **Assignment:** No contract resulting from this RFP may be assigned, sold, or transferred without the prior written consent of the System, and no obligation incurred pursuant to this RFP and any resulting contract may be delegated without written consent of the System.

2.9 **Advertisement:** The successful contractor is prohibited from using any contract award information in any advertisement, including press releases, without the prior written consent of the System.

2.10 **Cancellation of Contract:** The System reserves the right to cancel any award or contract without recourse upon written notice to the Contractor.

2.11 **Default and Remedies:** Non-performance of any requirement or condition of any contract resulting from this RFP shall constitute default. Upon default, the System shall issue a written notice of default providing a period in which the Contractor shall have thirty (30) days, or if the default is repeated during the term of the contract or any extension thereof, the System may, in its sole discretion, terminate the contract(s) or remaining portions thereof and exercise any remedy provided by law.

2.12 **Multiple Proposals:** Multiple proposals from a Proposer are permissible, however each individual proposal must independently conform fully to the requirements for proposal submission.

2.13 **Oral Presentations and Site Visits:** Selected Proposers may be required to make oral presentations and/or arrange visits at client sites to supplement their proposals, if requested by the System. The System will make every reasonable attempt to schedule each presentation at a time and location that is agreeable to the proposer. Failure of a Proposer to conduct a presentation on the date scheduled may result in rejection of the Proposer's proposal.

2.14 **Payment for Services:** The successful Contractor must be willing to accept payment for services on a completed or percent of completed fee basis over the life of the contract.

SECTION 3.0
GENERAL INFORMATION

3.1 BACKGROUND

The Arkansas State Highway Employees' Retirement System (ASHERS) is a single-employer, defined benefit program created by law in 1949 for the Arkansas Department of Transportation. A seven person Board of Trustees and an Executive Secretary administer the operations of the system.

All ASHERS members participate in a contributory plan whereby the employer and employees make contributions to the System. The employer contributes 12.9% of payroll, and employees contribute 6%.

ASHERS received in 1995 authorization from IRS for a 414(h) "employer pick-up" for employee contributions.

At $1.3 billion in overall size with 3,663 active members (includes DROP), 3,379 retirees and beneficiaries, and 217 deferred annuitants. The System is 86.2% funded, ASHERS uses a four-year actuarial smoothing method to maintain level employer contributions from generation to generation.

Benefit calculations are based on:

1. The number of years of creditable service
2. A multiplier of 2.2%
3. The average of the thirty-six (36) highest consecutive months' earnings.

Since 1997, ASHERS has required five (5) years of creditable service for vestment in the system. Full age and service requirements are as follows:

Age	Creditable Service Time
65	5 Years
62	15 Years
60	20 Years
55 with reduction	5 Years
Any	28 Years
Any	5 Years, if disabled and disability is permanent or of a long duration

Disability benefits are available to any vested member. The provisions are based on a determination of "total and permanent" disability by an independent medical board. Benefit calculations are based on the same formula in place for regular retirees.

ASHERS has a two-tiered Deferred Retirement Option Plan (DROP). As of June 30, 2017, there are 355 active members in the program.

Tier 1 is a 5-year plan where the employee's retirement benefit is calculated and 90% of this amount is deposited into an individual DROP account. Contributions will not be paid by either the employee or employer. To participate, an employee must meet the previously prescribed age and years of service requirements for full service retirement with the exception of 28 years and any age. Although one may retire with full benefits at 28 years, they cannot enroll in the DROP until they have 30 years of creditable service time.

The Tier 2 option allows an employee to continue working after the initial 5-year period as long as the person is less than 65 years of age. Only 79% of the calculated benefit amount is deposited into the individual's account; and the employee will resume paying the 6% contribution rate; in addition, the employer will match with a 6.9% rate.

ASHERS does not have responsibility for retiree health insurance or the state's deferred compensation (457) plan. However, retirees do receive a monthly health-care offset up to $125 depending on creditable years of service.

Beneficiaries of members of the system will qualify for a $7,500 benefit payment upon the death of a retiree. Beneficiaries of active employees in the system will qualify for a $15,000 benefit payment upon the death of the employee.

The actuarial investment return assumption is currently 8%.

Appendix A includes the following information on the operations of ASHERS:
- Actuarial valuation for the period ending June 30, 2017
- Current ASHERS Investment Policy
- ArDOT Employees Retirement System Booklet (14^{th} Edition)

The law governing ASHERS can be viewed at www.arkleg.state.ar.us beginning with Arkansas Code (annotated) 24-5-101.

Currently, ASHERS utilizes the services of a nationally known actuary that provides the following:

1. Annual policy actuarial valuations
2. An experience study at least every five (5) years
3. Cost study analyses on all retirement-related proposed legislation as needed for the biennial legislative sessions
4. Regular research on pertinent topics to the staff and trustees

3.2. OVERVIEW

ASHERS requests proposals from qualified actuarial consulting firms interested in providing a range of actuarial services while functioning as actuarial advisor to the ASHERS Board of Trustees.

Proposals submitted in response to this RFP must contain certain necessary information. This information is essential to understanding and evaluating the proposals. The intent is not to limit the content of the proposals, and responders may propose additional tasks or activities if they will substantially improve services desired by ASHERS: however, unnecessarily lengthy proposals will not enhance the evaluations ASHERS will conduct.

The emphasis should be on the consulting actuary's ability to satisfy the requirements of this RFP.

SECTION 4.0
REQUIREMENTS

4.1 SCOPE OF SERVICE REQUIREMENTS

The successful qualified vendor will be required to provide ASHERS, the following scope of services:

4.1.1 **Confidentiality of Member Data:** The consulting actuary is expected to comply with the provisions of the Arkansas Code as it applies to the privacy of member data. All data provided to the actuary by ASHERS should be considered confidential unless declared otherwise, in writing, by the retirement system.

4.1.2 **Delivery of Reports and other Correspondence:** The consulting actuary is expected to route all requests, reports and all other communication in connection with this assignment through the ASHERS Executive Secretary or an appointed designee.

4.1.3 **Perform all services within the scope of the contract under the direct supervision of a qualified actuary.** An approved actuary must be regularly engaged in the business of providing actuarial services and have at least fifteen (15) years of experience with large public employee retirement systems or have designation as a Fellow in the Society of Actuaries. ASHERS reserves the right to reject the firm's choice of a consulting actuary.

4.1.4 **Provide actuarial consultation and advisory services.** These services may be delivered in meetings, by telephone or through written correspondence. ASHERS expects these services may include public testimony to legislative committees as well as the ASHERS Board of Trustees. The consulting actuary should be readily accessible to ASHERS staff by telephone within one (1) business day.

4.1.5 **Attendance at ASHERS Board Meetings.** Attend regular quarterly board meetings as requested, as well as any special board meetings with complete printed and bound reports.

4.1.6 **Prepare various actuarial operating tables and factors.** From time to time, these tables and factors may be required for operation of the benefit program. These tools include, but are not limited to, mortality tables, option tables for annuitants; IRC tables (415, 401 (a), etc.) present value factors, interest adjustment factors, survivor benefit factors and Qualified Domestic Relations Order calculations.

4.1.7 **Prepare cost estimates of proposed legislation.** Provide timely financial estimates of planned statutory amendments as requested by the ASHERS Executive Secretary. It is expected that there will be an average of at least ten (10) such requests during any biennial legislative session and will require response within three (3) working days. These estimates must be prepared in accordance with generally accepted standards of actuarial work.

4.1.8 **Recommend and provide educational services to the ASHERS Board of Trustees on possible improvements in ASHERS financing and benefit structure.** Inform ASHERS of any new developments in the retirement industry and their effect on the financing and benefit structure of a retirement system. The consulting actuary should keep the ASHERS Board and Staff apprised of actuarial related developments at the federal and state level that might affect the System.

4.1.9 **Assist ASHERS Staff, as needed, in drafting new legislation or proposed changes to existing retirement laws that govern the System.** Provide actuarial expertise in the proper crafting of retirement legislation, as well as, developing strategies for resolving policy or administrative problems associated with implementing new legislation.

4.1.10 **Provide assistance on special benefit cases.** From time to time, the consulting actuary will be asked to review and assist in the application of various benefit options in complex cases.

4.1.11 **Perform annual actuarial valuations for the plan.** Valuations will be conducted for every annual period ending June 30 and in accordance with the most recent generally recognized standards for actuarial work. The valuation reports must contain detailed explanations of any significant changes in actuarial gains or losses because of deviations from expected experience and provide all information required by GASB for inclusion in the ASHERS annual financial report.

4.1.12 **Perform experience studies.** When an experience study indicates a need to revise actuarial assumptions used in the actuarial valuations, make recommendations for changing these assumptions, as appropriate, to the ASHERS Board of Trustees.

4.1.13 **Provide assistance to ASHERS on 415(b) limit calculations**. Provide software to determine possible 415(b) limit exceptions and determine the exact amount that is determined to be possible exceptions. The calculations should include DROP balances.

4.2 INFORMATION TO BE SUBMITTED WITH QUALIFICATIONS

All information in Section 4.2 must be submitted with qualifications response.

The qualifications proposal shall clearly address all of the information requested herein. Since prior experience weighs heavily in the evaluation process, information submitted should be complete and make a convincing case that the consultant can perform high quality work.

The successful candidate will demonstrate a proven track record of working with large public funds ($1 billion or larger) over at least fifteen (15) years. Public funds will represent at least 20% of the client base, with large public funds representing at least 10% of that base.

The vendor will demonstrate no fundamental conflicts of interest by having no affiliated securities brokerage and/or investment management operations. Alternatively, those having competing lines of business who might be awarded the ASHERS consulting mandate will be forbidden to provide either brokerage or investment management services to the System.

ORGANIZATION AND PERSONNEL:

4.2.1 Name of company, address, telephone number, fax number, email address (es) and title(s) of contact person(s).
4.2.2 A brief history of your firm's organization, number of years in business, form of organization, affiliates, if any; locations of principal and branch offices, and a list of your present directors or partners.
4.2.3 Attach an organizational chart indicating the flow of information and authority.
4.2.4 Indicate the professional employee turnover of the firm over the last five (5) years.
4.2.5 Provide biographies of your key personnel and professionals showing employment history, education, years of experience, and indicate the professionals that you anticipate would be assigned to the ASHERS account.
4.2.6 Are your accounts managed by teams or individuals? Who would be the System's back-up consultant, if any?
4.2.7 Describe any recent or pending mergers, acquisitions, or re-organizations that have been or may be encountered by your firm in the next 12-18 months; and the anticipated impact of such events upon your firm.
4.2.8 Describe all affiliations and relationships, both formal and informal, that your firm maintains. In describing any such relationship, disclose any financial incentives you, your firm, or principals of your firm have, if any, for referral of business to any such affiliates or their profitability.
4.2.9 Indicate the overall objectives of your firm with respect to your future growth, and comment particularly upon any present or planned areas of your business which you expect to emphasize or de-emphasize in the future.
4.2.10 Describe the compensation process for your consulting actuaries?
4.2.11 Describe any recent and significant developments in conjunction with your firm's operations that may be of interest to the System.

5.0 EXPERIENCE

5.0.1 Indicate the number of clients currently serviced by your firm in the capacity of general (See Scope of Service Requirements above.) How many of these clients are public fund clients? What is the approximate size of the average client in terms of portfolio dollars? Indicate the number of consulting actuaries that service this client base.

5.0.2 On average, how many accounts is each consulting actuary responsible for? How many clients are currently assigned to the individual who would serve the System?

5.0.3 Provide the number of new actuary accounts acquired in each year since 2002 and their asset value.

5.0.4 Provide the number of accounts lost each year since 2012 and their asset value. Indicate the reasons for lost accounts.

5.0.5 Provide a complete listing of your public fund clients, the nature of the services provided, and the current expected rate of return assumption.

5.0.6 Describe the extent of your experience and capabilities in providing advice and recommendations on retirement related actuarial issues, including funding methodologies, benefit structures, IRS guidance, etc.

5.0.7 Describe your general level of business that is devoted to the support of public plan sponsor needs vs. other industry participants.

5.1 ACTUARIAL VALUATION PROCEDURE, POLICY AND PROCESS

5.1.1 Describe your actuarial valuation procedure. List the titles and responsibilities of the various individuals involved at each state of the process.
5.1.2 How does your firm implement this actuarial valuation procedure? How would you implement this procedure with respect to ASHERS?
5.1.3 Please include a detailed overview of how you determine your expected rate of return assumption.
5.1.4 Identify the data elements and format required to receive data from ASHERS. Describe the edits you would run against the data to determine reasonableness. Describe your materiality threshold and procedures to resolve data issues.
5.1.5 Discuss in detail how your firm would provide assistance to the ASHERS staff in analyzing and evaluating legislative proposals, including actuarial costs studies and any other issues that may arise from time to time.
5.1.6 Discuss in detail how your firm would communicate suggestions to the ASHERS Board of Trustees following the completion of the annual actuarial valuation report.
5.1.7 Assuming that you received data in good form from ASHERS by July 30th, how soon thereafter can you provide the annual actuarial valuation report?

5.2 LEGAL

5.2.1 Has your firm, its principals or affiliates, ever been the focus of a non-routine federal or state inquiry or investigation? If yes, describe.
5.2.2 Has your firm been part to any litigation concerning fiduciary responsibility or other performance related matters? If yes, describe.
5.2.3 Has any organization submitted a claim to your error and omissions insurance or other fidelity bond insurance carrier? If yes, describe.

5.3 GENERAL

5.3.1 Describe any services your firm has provided for the State of Arkansas or any of its agencies. Include the dollar amount, if applicable.
5.3.2 Do you offer educational programs for trustees and pension staff? If so, describe.
5.3.3 Does your firm publish market commentary or provide research on industry issues? If so, provide examples.
5.3.4 Do you consider your firm to be proactive in its recommendations to clients? Or reactive?
5.3.5 Does your organization require each client to conform to house views or do individual teams have discretion when working with a client to consider the client’s unique situation?
5.3.6 Provide at least three (3) client references, preferably large public fund clients.

5.4 OTHER

5.4.1 Provide a copy of your most recent audited financial statements.
5.4.2 Provide a sample copy of an actuarial valuation for a public fund.
5.4.3 Provide a copy of the Code of Ethics Policy or guidelines that has been established for your firm.

SECTION 6.0
COST REQUIREMENTS

6.1 The vendor must provide the cost for the valuation.

6.2 The vendor must provide an hourly rate for cost studies on proposed legislation.

6.3 Itemize any additional cost requested in this RFP.

SECTION 7.0
EVALUATION CRITERIA

7.1 EVALUATION & SELECTION

Responses will be reviewed by ASHERS to ensure that all mandatory requirements have been submitted. An evaluation team determined by ASHERS will review the documents to determine the final ranking order of the vendors for the purpose of negotiations.

7.2 EVALUATION CRITERIA

In the response, the vendor must address each item listed in this section in order to be guaranteed a complete evaluation.

A. Organization	100
1. General Information	
2. Personnel Turnover	
3. Biographies of Key Personnel	
4. Financial Stability	
5. Code of Ethics	
B. Experience	100
1. Number of Current Clients	
2. Average Size of Client Portfolio Dollars	
3. Number of New Actuary Accounts Acquired Each Year Since 2012	
4. Number of Actuary Accounts Lost Each Year Since 2012	
5. Experience in Providing Advice and Recommendations on Retirement Related Actuarial Issues	
C. Actuarial Valuation Procedure, Policy and Process	100
1. Valuation Procedure	
2. Implementation Procedure for ASHERS	
3. Procedures to Resolve Data Issues	
4. Timeliness in Submitting Annual Evaluation Reports	
D. General/Legal	100
1. Services Provided for State of Arkansas	
2. Published Commentary/Research/Technology	
3. Educational Programs for Trustees or Pension Staff	
4. Litigation/Claims	
E. Cost	100
1. Cost of Annual Valuation	
2. Hourly Rate of Cost Analyses for Proposed Legislation	
3. Other Itemized Cost	
TOTAL MAXIMUM POINTS: 500	

********This page <u>must</u> be completed, properly signed and submitted for****** proposal to be considered.**

7.3 Signature Page

I, the undersigned, affirm that this proposal is made on behalf of the below-named company/individual, for whom I have legal authority to commit to the terms and conditions set forth in the RFP and this response, to which we agree to be bound if this proposal is found acceptable by the System; and that this proposal is made without any collusion or coercion on the part of any person, firm, corporation or other entity.

Company:___________________________________Address:_________________________________

Representative:_______________________________City:____________________________________

Title:_______________________________________Phone:________________Fax:______________

Federal Tax ID or Social Security No.:____

Signature:___________________________________Date:___________________________________
(Must be legible, original, no photocopies, and in ink)

For ASHERS Use Only

Accepted:____

By:______________________________________ Date:___________________________________

ELIGIBLE BIDDER CERTIFICATION

The Bidder represents and warrants for itself, its employees and its subcontractors and certifies they:

1. Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;

2. Have not within a three-year period preceding thus Bid been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State, or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

3. Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State, or local) with commission of any of the offenses enumerated in paragraph two (2) of this Certification;

4. Have not within a one-year period preceding this application/Bid had one or more public transactions (Federal, State, or local) terminated for cause or default; and

The Bidder represents, warrants and acknowledges the understanding that restrictions placed on the employment of labor or on the scale of pay for the work on a contract will be the requirements of the Fair Labor Standards Act (Federal Wage-Hour Law) of 1938, 28 USC §201 et seq., and other applicable labor laws.

The person executing this Certification further represents, warrants and affirms the truthfulness and accuracy of the contents of the statements submitted on or with this Certification and understands that the provisions of 31 USC §3801 et seq. are applicable thereto.

____

BIDDER NAME

BY:__________________________
Signature

TITLE:_______________________

CONTRACT AND GRANT DISCLOSURE AND CERTIFICATION FORM

Failure to complete all of the following information may result in a delay in obtaining a contract, lease, purchase agreement, or grant award with any Arkansas State Agency.

SUBCONTRACTOR: ☐ Yes ☐ No SUBCONTRACTOR NAME:

TAXPAYER ID NAME: IS THIS FOR: ☐ Goods? ☐ Services? ☐ Both?

YOUR LAST NAME: FIRST NAME: M.I.:

ADDRESS:

CITY: STATE: ZIP CODE: COUNTY:

AS A CONDITION OF OBTAINING, EXTENDING, AMENDING, OR RENEWING A CONTRACT, LEASE, PURCHASE AGREEMENT, OR GRANT AWARD WITH ANY ARKANSAS STATE AGENCY, THE FOLLOWING INFORMATION MUST BE DISCLOSED:

FOR INDIVIDUALS*

Indicate below if: you, your spouse or the brother, sister, parent, or child of you or your spouse is a current or former: member of the General Assembly, Constitutional Officer, State Board or Commission Member, or State Employee:

Position Held	Mark (✓)		Name of Position of Job Held	For How Long?		What is the person(s) name and how are they related to you? (i.e., Jane Q. Public, spouse, John Q. Public, Jr., child, etc.)	
	Current	Former	(senator, representative, name of board/ commission, data entry, etc.)	From MM/YY	To MM/YY	Person's Name(s)	Relation
General Assembly							
Constitutional Officer							
State Board or Commission Member							
State Employee							

☐ **None of the above applies**

FOR AN ENTITY (BUSINESS)*

Indicate below If any of the following persons, current or former, hold any position of control or hold any ownership interest of 10% or greater in the entity: member of the General Assembly, Constitutional Officer, State Board or Commission Member, State Employee, or the spouse, brother, sister, parent, or child of a member of the General Assembly, Constitutional Officer, State Board or Commission Member, or State Employee. Position of control means the power to direct the purchasing policies or influence the management of the entity.

Position Held	Mark (✓)		Name of Position of Job Held	For How Long?		What is the person(s) name and what is his/her % of ownership interest and/or what is his/her position of control?		
	Current	Former	(senator, representative, name of board/ commission, data entry, etc.)	From MM/YY	To MM/YY	Person's Name(s)	Ownership Interest (%)	Position of Control
General Assembly								
Constitutional Officer								
State Board or Commission Member								
State Employee								

☐ **None of the above applies**

Contract and Grant Disclosure and Certification Form

Failure to make any disclosure required by Governor's Executive Order 98-04, or any violation of any rule, regulation, or policy adopted pursuant to that Order, shall be a material breach of the terms of this contract. Any contractor, whether an individual or entity, who fails to make the required disclosure or who violates any rule, regulation, or policy shall be subject to all legal remedies available to the agency.

As an additional condition of obtaining, extending, amending, or renewing a contract with a state agency I agree as follows:

1. Prior to entering into any agreement with any subcontractor, prior or subsequent to the contract date, I will require the subcontractor to complete a **CONTRACT AND GRANT DISCLOSURE AND CERTIFICATION FORM**. Subcontractor shall mean any person or entity with whom I enter an agreement whereby I assign or otherwise delegate to the person or entity, for consideration, all, or any part, of the performance required of me under the terms of my contract with the state agency.

2. I will include the following language as a part of any agreement with a subcontractor:

   Failure to make any disclosure required by Governor's Executive Order 98-04, or any violation of any rule, regulation, or policy adopted pursuant to that Order, shall be a material breach of the terms of this subcontract. The party who fails to make the required disclosure or who violates any rule, regulation, or policy shall be subject to all legal remedies available to the contractor.

3. No later than ten (10) days after entering into any agreement with a subcontractor, whether prior or subsequent to the contract date, I will mail a copy of the CONTRACT AND GRANT DISCLOSURE AND CERTIFICATION FORM completed by the subcontractor and a statement containing the dollar amount of the subcontract to the state agency.

Signature	______________________	Title	______________________	Date	__________
Vendor Contact Person	______________________	Title	______________________	Phone No.	__________

Agency Use Only

Agency Number	________	Agency Name	________	Agency Contact Person	________	Contact Phone No.	________	Contract or Grant No.	________

RESTRICTION OF BOYCOTT OF ISRAEL CERTIFICATION

Pursuant to Arkansas Code Annotated § 25-1-503, a public entity **shall not** enter into a contract valued at $1,000 or greater with a company unless the contract includes a written certification that the person or company is not currently engaged in, and agrees for the duration of the contract not to engage in, a boycott of Israel.

By signing below, the Contractor agrees and certifies that they do not boycott Israel and will not boycott Israel during the remaining aggregate term of the contract.

If a company does boycott Israel, see Arkansas Code Annotated § 25-1-503.

Bid Number/Contract Number	
Description of product or service	
Contractor name	

Contractor Signature: ______________________________ Date: ________________
Signature must be hand written, in ink

GRS Retirement Consulting
P: 469.524.0000 | F: 469.524.0003 | www.grsconsulting.com

November 9, 2017

Board of Trustees
Arkansas State Highway Employees
Retirement System
P.O. Box 2261
Little Rock, AR 72203

Subject: GASB 67/68 Reporting and Disclosure Information for Arkansas State Highway Employees Retirement System (ASHERS) Fiscal Year Ending June 30, 2017

Dear Members of the Board:

This report provides information required by the Arkansas State Highway Employees Retirement System (ASHERS) in connection with the Governmental Accounting Standards Board (GASB) Statement No. 67, "Financial Reporting for Pension Plans." Additionally, this report provides information required by the State of Arkansas (the State) in connection with the GASB Statement No. 68, "Accounting and Financial Reporting for Pensions." It is our understanding this information will be used by the State in financial reporting for fiscal year ending June 30, 2018. The information provided herein was prepared for the purpose of assisting ASHERS and the State in the compliance with the financial reporting and disclosure requirements of GASB Nos. 67 and 68.

The calculation of the liability associated with the benefits referenced in this report was performed for the purpose of satisfying the requirements of GASB No. 67 and 68 and is not applicable for purposes of funding the plan. A calculation of the plan's liability for other purposes may produce significantly different results. This report may be provided to parties other than ASHERS only in its entirety and only with the permission of ASHERS.

The total pension liability, net pension liability, and certain sensitivity information shown in this report are based on an actuarial valuation performed as of June 30, 2017. The net pension liability incorporates the benefit changes enacted by the Legislature effective with the June 30, 2017 actuarial valuation. There were no other significant events or changes in benefit provisions that required an adjustment to the liabilities as of June 30, 2017. It is our opinion that the assumptions are internally consistent, reasonable, and comply with the requirements under GASB No. 67 and 68. As allowed for under GASB No. 68, it is intended that the State will report ASHERS' Net Pension Liability one year in arrears. In other words, the State will report the Net Pension Liability and Pension Expense for ASHERS from fiscal year 2017 in the State's fiscal year 2018 financial statements.

The System continues to use a blended discount rate. As discussed on page 3 the single discount rate is a blend of the long-term rate of return and a municipal bond rate. The benefit changes discussed above lengthened the period of time in which the long-term rate of return applies in the blended discount rate determination. In addition, while the long-term rate of return remained unchanged the municipal bond rate

Increased, which resulted in a decrease in the present value of the pension payments to which the municipal bond rate applied. These changes combined resulted in an increase to the single discount rate and a resulting decrease to the Total Pension Liability.

This report is based upon information, furnished to us by ASHERS, which includes benefit provisions, membership information, and financial data. We did not audit this data and information, but we did apply a number of tests and concluded that it was reasonable and consistent. GRS is not responsible for the accuracy or completeness of the information provided to us by ASHERS.

Certain tables included in the Required Supplementary Information should include a 10-year history of information. As provided for in GASB Statement Nos. 67 and 68, this historical information is only presented for the years in which the information was measured in conformity with the requirements of GASB Statement Nos. 67 and 68. The historical information in this report will begin with the information presented for the ASHERS fiscal year ending June 30, 2014.

Paragraph 57 of GASB Statement No. 68 indicates that contributions to the pension plan subsequent to the measurement date of the Net Pension Liability and prior to the end of the employer's reporting period can be reported by the employer as a deferred outflow of resources related to pensions. The information contained in this report does not incorporate any contributions made to ASHERS subsequent to June 30, 2017.

This report complements the actuarial valuation report as of June 30, 2017, provided for plan funding purposes, which was also provided to ASHERS and should be considered together as a complete report for the plan year ending June 30, 2017. Please see the actuarial valuation report as of June 30, 2017 for additional discussion of the actuarial valuation, including the nature of actuarial calculations and more information related to participant data, economic and demographic assumptions, and benefit provisions.

To the best of our knowledge, this report is complete and accurate and is in accordance with generally recognized actuarial practices and methods. Mr. Newton is member of the American Academy of Actuaries and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion herein.

Respectfully submitted,
Gabriel, Roeder, Smith & Company

Lewis Ward
Consultant

Joseph P. Newton, FSA, EA, MAAA
Senior Consultant

Summary of Population Statistics

The total pension liability described in this report is based on the plan membership as of June 30, 2017:

Inactive Plan Members or Beneficiaries Currently Receiving Benefits	3,379
Inactive Plan Members Entitled to But Not Yet Receiving Benefits	669
Active Plan Members (Including DROP)	3,663
Total Plan Members	7,711

Note: The Inactive Plan Members Entitled to But Not Yet Receiving Benefits include 452 non-vested terminated members entitled to a refund of their member contributions.

Measurement of the Net Pension Liability

A single discount rate of 5.16% was used to measure the total pension liability. This single discount rate was based on the expected rate of return on pension plan investments of 8.00% and the municipal bond rate of 3.56%. The projection of cash flows used to determine this single discount rate assumed that plan member contributions and employer contributions will be made at the projected future contribution rates assuming that ASHERS annually earns 8.00% on its market value of assets and that the number of active members remains constant in the future. Based on these assumptions, the pension plan's fiduciary net position was projected to be available to make projected future benefit payments of current plan members until 2045. As a result, the long-term expected rate of return on pension plan investments was applied to projected benefit payments through the year 2045, and the municipal bond rate was applied to all benefit payments after that date.

The single discount rate increased from 4.52% at the beginning of the year to 5.16% at the end of the fiscal year. This change in the single discount rate decreased the net pension liability by $137 million and is included in the Schedule of Changes in the Employer's Net Pension Liability as an assumption change.

Sensitivity of the Net Pension Liability to the Single Discount Rate Assumption

The following table provides the sensitivity of the net pension liability to changes in the discount rate as of June 30, 2017. In particular, the table presents the plan's net pension liability, if it were calculated using a single discount rate that is one-percentage-point lower or one-percentage-point higher than the single discount rate:

Sensitivity of the Net Pension Liability to the Single Discount Rate Assumption

1% Decrease 4.16%	Current Single Rate Assumption 5.16%	1% Increase 6.16%
$1,189,102,792	$897,349,898	$656,978,887

Disclosure Regarding the Deferred Retirement Option Program

GASB No. 67 states that for plans with a DROP feature, the plan must disclose: (1) a description of the DROP terms and (2) the balance of the amount held by the pension plan pursuant to the DROP. Please refer to Paragraph 30 of GASB No. 67 for additional information. We have assumed that ASHERS will prepare this information.

Note that GASB only considers employees as members of DROP. Therefore, it is most likely not necessary to include on the schedule the account balances of those retired members with DROP balances. However, it would certainly be reasonable to include the information, we would just suggest that if you do include the retired members' DROP balances that you identify the balances separately.

As stated above, we assume you will be preparing this information. However, if you require any assistance in preparing the disclosure information please do not hesitate to contact us.

Statement of Changes in Fiduciary Net Position
as of June 30, 2017

		2017
Additions		
Contributions		
Employer	$	19,175,401
Member		9,143,408
Other		-
Total Contributions	$	28,318,809
Investment Income		
Net Appreciation in Fair Value of Investments	$	116,623,355
Interest and Dividends		24,625,498
Less Investment Expense		(8,081,509)
Net Investment Income	$	133,167,344
Other	$	-
Total Additions	$	161,486,153
Deductions		
Benefit Payments and Refunds	$	111,904,597
Pension Plan Administrative Expense		130,076
Other		-
Total Deductions	$	112,034,673
Net Increase in Net Position	$	49,451,480
Net Position Restricted for Pensions		
Beginning of Year	$	1,304,869,720
End of Year	$	1,354,321,200

This reconciliation only includes the items needed to reconcile the changes in Net Pension Liability during the fiscal year. The Reconciliation of Fiduciary Net Position required by GASB may require additional detail regarding the changes throughout the year.

Schedules of Required Supplementary Information
Schedule of Changes in the Employers' Net Pension Liability and Related Ratios

Last 10 Fiscal Years (which may be built prospectively)

Fiscal year ending June 30,	2017	2016	2015	2014	2013	2012	2011	2010	2009	2008
Total pension liability										
Service Cost	$ 42,816,372	$ 18,935,319	$ 18,412,588	$ 16,862,918						
Interest on the Total Pension Liability	110,543,661	126,829,266	115,441,556	112,962,064						
Benefit Changes	(101,042,380)	-	-	-						
Difference between expected and actual experience of the Total Pension Liability	(31,506,816)	20,925,790	20,790,869	-						
Assumption Changes	(137,435,476)	790,989,712	91,940,822	-						
Benefit Payments and Refunds	(111,904,597)	(106,755,840)	(102,245,806)	(95,454,598)						
Net Change in Total Pension Liability	(228,529,236)	850,924,247	144,340,029	34,370,384						
Total Pension Liability - Beginning	2,480,200,334	1,629,276,087	1,484,936,058	1,450,565,674						
Total Pension Liability - Ending	$ 2,251,671,098	$ 2,480,200,334	$ 1,629,276,087	$ 1,484,936,058						
Plan Fiduciary Net Position										
Contributions - Employer	$ 19,175,401	$ 19,231,804	$ 19,059,012	$ 18,614,507						
Contributions - Member	9,143,408	9,379,784	9,138,451	8,884,829						
Pension Plan Net Investment Income	133,167,344	(60,344,122)	25,383,756	234,208,606						
Benefit Payments and Refunds	(111,904,597)	(106,755,840)	(102,245,806)	(95,454,598)						
Pension Plan Administrative Expense	(130,076)	(118,199)	(91,542)	(43,282)						
Other	-	-	-	-						
Net Change in Plan Fiduciary Net Position	49,451,480	(138,606,573)	(48,756,129)	166,210,062						
Plan Fiduciary Net Position - Beginning	1,304,869,720	1,443,476,293	1,492,232,422	1,326,022,360						
Plan Fiduciary Net Position - Ending	$ 1,354,321,200	$ 1,304,869,720	$ 1,443,476,293	$ 1,492,232,422						
Net Pension Liability - Ending	897,349,898	1,175,330,614	185,799,794	(7,296,364)						
Plan Fiduciary Net Position as a Percentage of Total Pension Liability	60.15 %	52.61 %	88.60 %	100.49 %						
Covered Employee Payroll	$ 141,154,763	$ 141,906,487	$ 140,544,393	$ 137,261,720						
Net Pension Liability as a Percentage of Covered Employee Payroll	635.72 %	828.24 %	132.20 %	(5.32)%						

Notes to Schedule:

The covered payroll is the reported salary for the fiscal year for activemembers (who are not in DROP) as of the measurement date. If the reportedsalary was for a period of less than 12 months then it has been annualized.

Schedules of Required Supplementary Information
Schedule of the Net Pension Liability (Historical)

Last 10 Fiscal Years (which may be built prospectively)

FY Ending June 30,	Total Pension Liability	Plan Net Position	Net Pension Liability	Plan Net Position as a % of Total Pension Liability	Covered Payroll	Net Pension Liability as a % of Covered Payroll
2014	$ 1,484,936,058	$ 1,492,232,422	$ (7,296,364)	100.49%	$137,261,720	(5.32)%
2015	1,629,276,087	1,443,476,293	185,799,794	88.60%	140,544,393	132.20 %
2016	2,480,200,334	1,304,869,720	1,175,330,614	52.61%	141,906,487	828.24 %
2017	2,251,671,098	1,354,321,200	897,349,898	60.15%	141,154,763	635.72 %

Schedules of Required Supplementary Information
Schedule of Employer Contributions

Last 10 Fiscal Years

FY Ending June 30,	Actuarially Determined Contribution	Actual Contribution	Contribution Deficiency (Excess)	Covered Payroll	Actual Contribution as a % of Covered Payroll
2014	N/A	$ 18,614,507	N/A	$137,261,720	13.56%
2015	N/A	19,059,012	N/A	140,544,393	13.56%
2016	N/A	19,231,804	N/A	141,906,487	13.55%
2017	N/A	19,175,401	N/A	141,154,763	13.58%

Notes to Schedule:

The covered payroll is the reported salary for the just completed fiscal year for active members (who are not in DROP) as of the measurement date. If the reported salary was for a period of less than 12 months then it has been annualized. The employer contribution rate is established under State statute and is not based on a funding policy. Therefore, no Actuarially Determined Contribution is shown.

Notes to Schedule of Contributions

Valuation Date:	June 30, 2016
Notes	The covered payroll is the reported salary for the fiscal year for active members (who are not in DROP) as of the measurement date. If the reported salary was for a period of less than 12 months then it has been annualized.

Methods and Assumptions Used to Determine Contribution Rates:

Actuarial Cost Method	Entry Age Normal
Amortization Method	Level Percentage of Payroll, Open
Remaining Amortization Period	Never
Asset Valuation Method	4-year smoothed market
Inflation	2.50%
Salary Increases	3.50% to 10.50%
Investment Rate of Return	8.00%
Retirement Age	Experience-based table of rates that are specific to the class of employee. Last updated for the 2015 valuation pursuant to an experience study of the 6-year period from July 1, 2008 through June 30, 2014.
Mortality	Male: RP-2000 Combined Healthy for males with Blue Collar adjustments, scaled at 105% with no setback. Generational mortality improvements in accordance with Scale AA from the table's base year of 2000 (both before and after the measurement date) Female: RP-2000 Combined Healthy for males with Blue Collar adjustments, scaled at 100% with no setback. Generational mortality improvements in accordance with Scale AA from the table's base year of 2000 (both before and after the measurement date)

Other Information:

Notes	None.

GOVERNMENTAL EMPLOYER FINANCIAL STATEMENTS

Pension Expense for Fiscal Year Ending June 30, 2017
To be used for Governmental Employer Reporting for Fiscal Years Ending
Between June 30, 2017 and June 30, 2018

Arkansas State Highway Employees Retirement System

A. Expense

1. Service Cost	$	42,816,372
2. Interest on the Total Pension Liability		110,543,661
3. Current-Period Benefit Changes		(101,042,380)
4. Member Contributions		(9,143,408)
5. Projected Earnings on Plan Investments		(101,171,019)
6. Pension Plan Administrative Expense		130,076
7. Other Changes in Plan Fiduciary Net Position		0
8. Recognition of beginning deferred outflows (inflows) due to liabilities		159,917,783
9. Recognition of beginning deferred outflows (inflows) due to assets		20,218,323
10. Total Pension Expense	**$**	**122,269,408**

Recognition of Deferred Outflows and Inflows of Resources

According to paragraph 33 of GASB No. 68, *differences between expected and actual experience* and *changes in assumptions* are recognized in pension expense using a systematic and rational method over a closed period equal to the average of the expected remaining service lives of all employees that are provided with pensions through the pension plan (active employees and inactive employees) determined as of the beginning of the measurement period.

At the beginning of the 2017 fiscal year, the expected remaining service lives of all employees was 36,633 years for ASHERS. Additionally, the ASHERS plan membership (active employees and inactive employees) was 7,680. As a result, the average of the expected remaining service lives for purposes of recognizing the applicable deferred outflows and inflows of resources established in the 2017 fiscal year is 4.77 years.

Additionally, *differences between projected and actual earnings on pension plan investments* should be recognized in pension expense using a systematic and rational method over a closed five-year period.

For this purpose, the deferred outflows and inflows of resources are recognized in the pension expense as a level dollar amount over the closed period identified above.

GOVERNMENTAL EMPLOYER FINANCIAL STATEMENTS

Statement of Outflows and Inflows Arising from Current and Prior Reporting Periods
For Plan Year Ending June 30, 2017
To be used for Governmental Employer Reporting for Fiscal Years Ending
Between June 30, 2017 and June 30, 2018

A. Outflows and Inflows of Resources due to Liabilities and Assets to be recognized in Current Pension Expense

	Outflows of Resources	Inflows of Resources	Net Outflows(Inflows) of Resources
1. Due to liabilities	$ 195,335,455	$ 35,417,672	$ 159,917,783
2. Due to assets	52,786,940	32,568,617	20,218,323
3. Total	$ 248,122,395	$ 67,986,289	$ 180,136,107

B. Outflows and Inflows of Resources by Source to be recognized in Current Pension Expense

	Outflows of Resources	Inflows of Resources	Net Outflows(Inflows) of Resources
1. Differences between expected and actual experience	$ 8,791,888	$ 6,605,203	$ 2,186,685
2. Assumption Changes	186,543,568	28,812,469	157,731,099
3. Net Difference between projected and actual earnings on pension plan investments	52,786,940	32,568,617	20,218,323
4. Total	$ 248,122,395	$ 67,986,289	$ 180,136,107

C. Deferred Outflows and Deferred Inflows of Resources by Source to be recognized in Future Pension Expenses

	Deferred Outflows of Resources	Deferred Inflows of Resources	Net Outflows(Inflows) of Resources
1. Differences between expected and actual experience	$ 19,765,052	$ 24,901,613	$ (5,136,561)
2. Assumption Changes	490,528,098	108,623,007	$ 381,905,091
3. Net Difference between projected and actual earnings on pension plan investments	140,135,863	51,766,412	$ 88,369,451
4. Total	$ 650,429,013	$ 185,291,032	$ 465,137,981

D. Deferred Outflows and Deferred Inflows of Resources by Year to be recognized in Future Pension Expenses

Fiscal Year Ending	Outflows of Resources	Inflows of Resources	Net Outflows(Inflows) of Resources
2018	$ 248,122,395	$ 67,986,289	$ 180,136,107
2019	242,438,442	$ 41,816,937	200,621,505
2020	159,868,176	$ 41,816,937	118,051,239
2021	-	$ 33,670,869	(33,670,869)
2022	-	-	-
Thereafter	-	-	-
Total	$ 650,429,013	$ 185,291,032	$ 465,137,981

Arkansas State Highway Employees Retirement Systems

Actuarial Valuation Report

As of June 30, 2017

GRS Retirement Consulting

P: 469.524.0000 | F: 469.524.0003 | www.grsconsulting.com

November 1, 2017

Board of Trustees
Arkansas State Highway Employees
Retirement System
P.O. Box 2261
Little Rock, AR 72203

Dear Members of the Board:

Subject: Actuarial Valuation as of June 30, 2017

We certify that the information contained in this report is accurate and fairly presents the actuarial position of the Arkansas State Highway Employees Retirement System (ASHERS) as of June 30, 2017.

All calculations have been made in conformity with generally accepted actuarial principles and practices, and with the Actuarial Standards of Practice issued by the Actuarial Standards Board. In our opinion the results presented also comply with Arkansas statutes, and, where applicable, the Internal Revenue Code, ERISA, and the Statements of the Governmental Accounting Standards Board. The undersigned are independent actuaries and both are experienced in performing valuations for large public retirement systems. Joseph Newton is an Enrolled Actuary and a Member of the American Academy of Actuaries, and meets the Qualification Standards of the American Academy of Actuaries.

Actuarial Valuation

The primary purposes of the valuation report are to determine the adequacy of the current employer contribution rate, to describe the current financial condition of ASHERS, and to analyze changes in ASHERS' condition.

This report no longer provides information related to Governmental Accounting Standards Board (GASB) Statement No. 25. All of the information required by GASB is now provided in a stand-alone report entitled "GASB 67 Reporting and Disclosure Information", dated November 1, 2017 for the plan year ending June 30, 2017.

Valuations are prepared annually, as of June 30 of each year, the last day of ASHERS' plan and fiscal year.

FINANCING OBJECTIVES

As of June 30, 2017, the System's UAAL is $229.6 million, and the current funding period is 77.6 years.

The member and employer contribution rates are established by statute. Currently, members contribute 6% of annual compensation, and the State contributes 12.90%. The rates are intended to be sufficient to pay ASHERS' normal cost and to amortize ASHERS' unfunded actuarial accrued liability (UAAL) in level payments (as a percentage of payroll) over a period not in excess of 30 years from the valuation date. The amortization period for the current contribution rates is more than 30 years and, therefore, **the financing objectives are currently not being met**. A State contribution rate of 15.04% of payroll (in conjunction with a member rate of 6.00%) for fiscal year 2018 would produce a 30-year funding period.

The funded ratio (the ratio of the actuarial value of assets to the actuarial accrued liability) increased from last year. The funded ratio at June 30, 2016 was 85.7%, while it is 86.2% as of June 30, 2017. This increase is due to the reduction in liabilities from legislative changes offset by the actuarial losses on the actuarial liabilities and actuarial value of assets. Without the legislative change, the funded ratio would have declined.

Given the current outlook, it is unlikely the current contribution levels will sustain the current benefit package. We strongly urge the Board of Trustees to request increases in the contributions to the System and/or consider further changes to the benefit structures and of the System.

BENEFIT PROVISIONS

The actuarial valuation reflects the benefit and contribution provisions set forth in the Arkansas statutes. There was one piece of legislation impacting the benefits payable from ASHERS effective June 30, 2017.

- ACT 610: Cost of living increase will be the lesser of 3% or the percentage change in the Consumer Price Index for Urban Wage Earners and Clerical Workers as determined by the United States Department of Labor over the one-year period ending in the December immediately preceding the date of which the redetermined amount is being calculated. However, the redetermined amount of the benefit to be paid shall not be less than the redetermined amount of the benefit paid in the preceding year.

Section U of Appendix 1 summarizes the most recent plan changes which were effective in 2017. There are no ancillary benefits (such as cost-of-living increases to retirees) funded by a source independent of ASHERS.

ASSUMPTIONS AND METHODS

Actuarial assumptions and methods are set by the Board of Trustees, based upon recommendations made by the plan's actuary. We believe these assumptions are internally consistent and where applicable are reasonably based on the actual experience of ASHERS, and comply with Actuarial Standards of Practice.

The results of the actuarial valuation are dependent on the actuarial assumptions used. Actual results can and almost certainly will differ, as actual experience deviates from the assumptions. Even seemingly minor changes in the assumptions can materially change the liabilities, calculated contribution rates and funding periods. The actuarial calculations are intended to provide information for rational decision making.

This report does not include a more robust assessment of the risks of future experience not meeting the actuarial assumptions. Additional assessment of risks was outside the scope of this assignment.

There have been no changes to the actuarial assumptions and methods since the prior actuarial valuation. Please see Appendix 2 for a summary of the current actuarial assumptions.

DEFERRED RETIREMENT OPTION PROGRAM (DROP)

We have reviewed the DROP program to determine its overall impact on the liabilities of the System. Based on the current actuarial assumptions, the overall DROP program does not increase the cost of the benefits for new hires. For active employees, while overall the DROP program provides some additional costs to the System, Tier II of the DROP program does not add any additional costs.

DATA

Member data for retired, active, and inactive participants was supplied as of June 30, 2017, by the staff of ASHERS. We have not subjected this data to any auditing procedures, but have examined the data for reasonableness and consistency with the prior year's data. Asset information was also supplied by the ASHERS staff.

Please see the page titled Actuarial Standards of Practice Disclosure Statements for additional disclosures required by our Actuarial Standards of Practice.

CERTIFICATION

We certify that the information presented herein is accurate and fairly portrays the actuarial position of ASHERS as of June 30, 2017.

All of our work conforms with generally accepted actuarial principles and practices and with the Actuarial Standards of Practice issued by the Actuarial Standards Board.

The undersigned are independent actuaries and consultants. Mr. Newton is an Enrolled Actuary and a Member of the American Academy of Actuaries and meets the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein. Both consultants below are experienced in performing valuations for large public retirement systems.

Sincerely,

Joseph P. Newton, FSA, MAAA, EA
Senior Consultant

Lewis Ward
Consultant

J:\3003\2017\VAL\ASHERS_val17.docx

ACTUARIAL STANDARDS OF PRACTICE DISCLOSURE STATEMENTS

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the plan's funded status); and changes in plan provisions or applicable law.

This report should not be relied on for any purpose other than the purpose described above. Determinations of the financial results associated with the benefits described in this report in a manner other than the intended purpose may produce significantly different results.

The valuation was based upon information furnished by the System's staff, concerning Retirement System benefits, financial transactions, plan provisions and active members, terminated members, retirees and beneficiaries. We checked for internal and year-to-year consistency, but did not otherwise audit the data. We are not responsible for the accuracy or completeness of the information provided by the System's staff.

The developed findings included in this report consider data or other information through June 30, 2017.

This is one of multiple documents comprising the actuarial report. The other document comprising the actuarial report is a PowerPoint presentation presented to the Board of Trustees following the publication of this report.

Table of Contents

Executive Summary

The key results of the valuation of the Arkansas State Highway Employees Retirement System as of June 30, 2017, may be summarized as follows:

	June 30, 2017 (1)	June 30, 2016 (2)
1. Assets		
Market Value	$ 1,354.3 million	$ 1,304.9 million
Actuarial Value	$ 1,439.5 million	$ 1,447.3 million
2. Members		
a. Actives not in DROP	3,308	3,406
b. Actives in DROP	355	364
c. Inactive, vested	217	206
d. Retirees and beneficiaries	3,379	3,301
3. Annualized salaries (excluding DROP participants)	$141.2 million	$141.9 million
4. Normal Cost rate	11.78%	12.50%
5. UAAL	$229.6 million	$241.9 million
6. Actuarial assets as % of actuarial accrued liability	86.2%	85.7%
7. Funding period	77.6 years	Infinite
8. Employer contribution rate necessary to produce 30-year funding period	15.04%	16.57%
9. Estimated yield on actuarial assets for prior year	5.39%	6.82%
10. Estimated yield on market value for prior year	10.53%	(4.31%)
11. Member contributions for prior year	$9.1 million	$9.4 million
12. Member contribution rate for prior year	6.00%	6.00%
13. State contributions for prior year	$19.2 million	$19.2 million
14. State contribution rate for prior year	12.90%	12.90%
15. Benefit, refund, and administrative expense payments for prior year	$112.0 million	$106.9 million
16. Net Investment income for prior year	$133.2 million	($60.3) million

Executive Summary (Continued)

	June 30, 2017 (1)	June 30, 2016 (2)
17. Actuarial gains (losses)		
Assets	($36.7) million	($16.4) million
Liability experience	(12.7) million	(20.9) million
Legistative changes	70.6 million	0.0 million
Method change	0.0 million	0.0 million
Assumption change	0.0 million	0.0 million
Total	$21.2 million	($37.3) million

18. Changes in funding period	UAAL ($ Million) (1)	Funding Period (in years) (2)	Change in Funding Period (in years) (3)
a. 2016 valuation	$241.9	Infinite	0.0
b. 2017 valuation with all expected experience	$250.8	Infinite	N/A
c. 2017 valuation with actual assets	$287.5	Infinite	N/A
d. 2017 valuation with actual assets and actual liabilities	$300.2	Infinite	N/A
e. 2017 valuation with actual assets and actual liabilities, after assumption changes and before method changes	$300.2	Infinite	N/A
f. 2017 valuation with actual assets and actual liabilities, after assumption changes and assumption changes	$229.6	77.6	N/A

Introduction

The results of the June 30, 2017, actuarial valuation of the Arkansas State Highway Employees Retirement System (ASHERS) performed by Gabriel, Roeder, Smith are summarized in this report. The purpose of any actuarial valuation is to provide an estimate of how well the employer is meeting its emerging pension liabilities.

In preparing this valuation, Gabriel, Roeder, Smith has relied on employee data and asset information provided by the staff of ASHERS. While not verifying the data at their source, Gabriel, Roeder, Smith has performed such tests for consistency and reasonableness as has been deemed necessary to be satisfied with the appropriateness of using the data supplied.

The valuation results are based on benefit provisions of the System as of June 30, 2017, as summarized in Appendix 1. The determination of actuarial accrued liabilities and funded status is based on the actuarial assumptions adopted effective for the June 30, 2017 valuation, and as summarized in Appendix 2.

The discussion section starts with an executive summary of the key valuation results. It is intended to provide one convenient place for those valuation items most often referenced during the year. The results of the actuarial valuation are summarized on page 4. Page 5 discusses the change in assets during the last year and page 6 discusses actuarial gains and losses during the year. The impact of the changes is discussed on page 7. Finally, page 10 provides our summary remarks regarding the actuarial valuation. Completing the report is Section B with the various supporting tables.

Funded Status

Table 3 in Section B details the normal cost of the Retirement System by its various components. This normal cost is developed based on the valuation method known as the Entry Age Normal (EAN) actuarial valuation method. This method gives an equitable allocation of contribution requirements among various generations of taxpayers, complying with the objective of Act 793 of 1977.

Table 3 details the normal cost by its various components. The total normal cost for the Retirement System is 11.78% of pay. Retirement benefits account for 8.32% of the 11.78% total normal cost. Benefits payable upon death, disability, and other terminations account for the remaining 3.46% of the total normal costs.

Table 1 calculates the unfunded actuarial accrued liability (UAAL). As shown in Item 10, the UAAL has decreased from $241.9 million to $229.6 million. The decrease was due to gain from legislative changes offset by experience losses on liabilities and assets. Since the UAAL is positive, the System is deemed to be underfunded. As shown in Item 12, the funding period became 77.6 years, which means the current employer contribution rate is sufficient to amortize the UAAL over a 77.6 year period.

The funded ratio, the ratio of actuarial value of assets of the System to the actuarial accrued liability of the System, increased from 85.7%, as of June 30, 2016, to 86.2%, as of June 30, 2017. The ratio of the market value of assets to the actuarial accrued liability increased year over year from 77.2% to 81.1%.

The actuarial asset method recognizes investment excesses/(shortfalls) over a 4 year period. Therefore, excess/(shortfall) bases will be recognized 25% per year over four valuations (including this one). The shortfall earnings for fiscal years 2015 and 2016 were $91.1 million and $172.8 million while the excess earnings for fiscal years 2014 and 2017 were $130.8 million and $32.0 million. Therefore, $24.0 million (or 75% of the total 2017 excess earnings), $ (86.4) million (or 50% of the total 2016 shortfall earnings) and ($22.8) million (or 25% of the total 2015 shortfall earnings) are still being deferred for recognition in future valuations. The remaining excess earnings from 2014 were fully recognized in this valuation.

Changes in Assets during the Year

This section of the report provides an analysis of the change in the accounting assets during the year and estimates the yield on mean assets of the total System. Table 6 provides the change in the plan net assets.

Part II of Table 6 details the revenue of the year, distinguished between contributions in Item A and investment income in Item B. The total revenue for the year is shown in Item C.

In Part III of Table 6 the System's expenditures for the year are categorized into refunds (Item III.A), benefit payments (Item III. B), and administrative expenses (Item III.D), with the total for the year shown in Item III.E.

The net increase/(decrease) in market value of the System during the year is shown in Item IV as $49.4 million.

Item VI and Item VII of Table 6 use the increases and decreases of the prior sections of the table to produce an estimated yield based on market value and on actuarial value.

The estimated yield is derived by applying the traditional yield formula of 2I/(A + B – I). As indicated by Item VII.D. in Table 6, the estimated yield on actuarial assets is 5.39%. The estimated yield on mean market assets is 10.53%.

As shown on Table 4-A, the expected investment income for fiscal year 2017 was $101.0 million. The actual investment income (net of all expenses) during fiscal year 2017 was $133.0 million. Therefore, the excess in investment income for the fiscal year was $32.0 million. 25% of this excess will be recognized in this valuation and the remainder will be recognized over the next three valuations.

Actuarial Gains and Losses

Previously, it was noted that the unfunded actuarial accrued liability (UAAL) has decreased from $241.9 million in 2016 to $229.6 million in 2017. The purpose of this section is to determine the source of the actuarial gains/losses during the year that have caused the UAAL to decrease.

Table 8 develops the expected value of actuarial assets for this valuation, based on the investment return assumption that was in effect for the 2016/2017 plan year, namely, 8.0%. It compares the expected value with the actual value of actuarial assets as of the end of the year to determine the asset gain (loss) for the year.

As shown in Item 6 of Table 8, the expected value of actuarial assets as of June 30, 2017, is $1,476.2 million. As shown in Item 7, the actual value of actuarial assets as of the valuation date is $1,439.5 million. Thus the asset loss for the year is the difference between the actual value and the expected value, or $36.7 million (as shown in Item 8).

Table 9 determines that the overall actuarial gain for the 2016/2017 plan year is $21.2 million. The asset loss for the year is $36.7 million. This means that the total liability gain for the year is $57.9 million. This is comprised of a $70.6 million gain due to the legislative changes and a $12.7 million liability experience loss, which is 0.76% of the actuarial accrued liability.

Impact of Changes

Using the actuarial gains and losses developed in Table 9, it is possible in Table 10 to trace the source of the changes in the funding period between June 30, 2016 and June 30, 2017.

The funding period as of June 30, 2016, was infinite. Item 2 of Table 10 indicates that if experience had been exactly as anticipated (i.e., no actuarial gains or losses on either the asset or the liability side, but using actual payroll) the UAAL would have been $250.8 million and the funding period would have remained infinite.

The asset loss of $36.7 million increased the above expected UAAL to $287.5 million. The liability experience loss of $12.7 million increased the UAAL to $300.2 million. Finally, the liability gain due to the legislated benefit changes decreased the UAAL by 70.6 million to $229.6, which resulted in the funding period of 77.6 years.

History of Cash Flow

Table 11 provides a history of external cash flow. External cash flow is defined as total contributions during the year, less benefit payments, refunds, window benefits, and expenses.

Note that the calculation of external cash flow specifically excludes investment income since investment income is generated by the System. If external cash flow is positive, all expenditure obligations can be met by external funds, and all income generated by the System's investments is available for re-investment.

On the other hand, when external cash flow becomes negative, some portion of investment income must be used to make benefit payments instead of being re-invested. The more negative this measure, the more emphasis asset allocation must place on the production of current income as opposed to long-term asset growth.

External cash flow became negative for the first time from July 1, 1994 to June 30, 1995 and has slowly grown more negative since that time. This is the expected consequence of a mature pension plan. The reason we pre-fund the pension plans is so that the assets (and income on those assets) can be used to meet benefit payments obligations. The negative cash flow has grown to more than 6% of plan assets and the plan is having to hold more cash to meet its cash flow obligations. Holding a significant allocation to cash makes it more difficult to meet the investment return assumption. This item will need to be closely monitored.

Historical Comparisons and Statistical Summaries

Tables 13 through 16 summarize statistical information for active and retired members of Arkansas State Highway Employees Retirement System as of June 30, 2017. The number of participants in DROP decreased from 364 to 355 as of the valuation date (See Table 12). As expected, there was an increase in the amount of benefit payments made during the fiscal year. However, there was a decrease in the amount of contributions received which was unexpected. This increase in benefit payments and decrease in contributions caused an increase in the negative external cash flow of the System.

Summary and Closing Comments

Like most retirement systems with June 30 measurement dates, the System earned more than its assumed rate of return on investments for the 2017 fiscal year, when measured on a market value basis. Arkansas State Highway Employees Retirement System (ASHERS) 2017 fiscal year return of 10.53% was 2.53% above its investment return assumption.

The 1998 valuation was the first ASHERS valuation to include members participating in DROP. As of June 30, 2017, there are 355 active employees who are DROP participants with an average balance per participant of $119,052.

As noted earlier in this section, general market conditions produced an investment gain on a market value basis when compared with the 8% assumption during the 2017 plan year. As shown on Table 8, the System experienced a loss on the actuarial value of assets due to the partial recognition of the investment gains from fiscal year 2014 and 2017 not being sufficient to offset the partial recognition of the shortfalls in 2015 and 2016. As shown on Table 4-B, the actuarial asset valuation method is now deferring $85.2 million in net investment losses compared with $142.5 million net investment losses in the prior valuation.

The System remained in an unfunded position this year. The current funding deficit is $229.6 million. While the funded ratio of the System at 86.2% is still strong, the funding period is still 77.6 years, which means the current employer contribution rate is not sufficient to amortize the UAAL until 2095. It should be noted that on a market value of asset basis the funding period would be infinite, and in fact, instead of having a measurable date at which the UAAL is anticipated to be fully amortized, there is a projected date the plan will become insolvent (2061 based on current assumptions).

Given the current outlook, it is unlikely the current contribution levels will sustain the current benefit package. We strongly urge the Board of Trustees to request increases in the contributions to the System and/or consider further changes to the benefit structures and of the System.

In addition, it has been three years since the most recent experience study and there are material decisions to be made by the Board in the upcoming months. We strongly urge the Board to conduct and experience study to assist them in deciding what the best path is for the System going forward.

Because the funding period is more than 30 years, the State law banning benefit enhancements is currently applicable.

Section B – Tables

Table 1

Summary of Cost Items

		Valuation as of June 30, 2017	Valuation as of June 30, 2016
		(1)	(2)
1.	Participants		
	a. Active members not in DROP	3,308	3,406
	b. Active members in DROP	355	364
	c Inactive members with deferred benefits	217	206
	d. Retired members and beneficiaries	3,379	3,301
	e. Total	7,259	7,277
2.	Annualized salaries (excludes DROP participants)	$ 141,154,763	$ 141,906,487
3.	Averages for active members (excludes DROP participants)		
	a. Age	43.2	43.2
	b. Service	9.7	9.5
	c. Pay	$ 42,671	$ 41,664
4.	State normal cost	11.78%	12.50%
5.	Present value of future benefits		
	a. Retired members	$ 1,106,377,527	$ 1,090,063,509
	b. Active members	680,152,759	724,464,127
	c. Vested terminated members	9,119,875	9,474,088
	d. Non-vested terminated members	863,988	780,875
	e. Total	$ 1,796,514,149	$ 1,824,782,599
6.	Present value of future normal costs	$ 122,016,636	$ 130,037,374
7.	Present value of Tier II DROP contributions	$ 5,389,587	$ 5,534,603
8.	Actuarial accrued liability (Item 5.e. - Item 6 - Item 7)	$ 1,669,107,926	$ 1,689,210,622
9.	Actuarial assets	$ 1,439,516,380	$ 1,447,342,661
10.	Unfunded actuarial accrued liability (Item 8 - Item 9)	$ 229,591,546	$ 241,867,961
11.	Employer contribution rate	12.90%	12.90%
12.	Funding period	77.6 years	Infinite
13.	Estimated yield on assets		
	a. Based on Market Value	10.53%	(4.31%)
	b. Based on Actuarial Value	5.39%	6.82%
14.	Relative size of unfunded actuarial accrued liability		
	a. As % of actuarial assets	15.9%	16.7%
	b. As % of covered payroll	162.7%	170.4%
	c. As % of total present value of future benefits	12.8%	13.3%

Table 2

Actuarial Present Value of Future Benefits

		June 30, 2017 (1)	June 30, 2016 (2)
1. Active members			
a.	Retirement benefits	$ 610,087,608	$ 650,670,428
b.	Deferred termination benefits	20,379,653	21,194,073
c.	Refunds	1,208,309	1,299,999
d.	Death benefits	6,969,551	7,477,723
e.	Disability benefits	41,507,638	43,821,904
f.	Total	$ 680,152,759	$ 724,464,127
2. Retired members			
a.	Service retirements	$ 956,319,918	$ 947,512,818
b.	Disability retirements	83,349,751	75,920,111
c.	Beneficiaries	66,707,858	66,630,580
d.	Window health insurance subsidy	-	-
e.	Total	$ 1,106,377,527	$ 1,090,063,509
3. Inactive members			
a.	Vested terminations	$ 9,119,875	$9,474,088
b.	Non-vested terminations	863,988	780,875
c.	Total	$ 9,983,863	$10,254,963
4. Total actuarial present value of future benefits		$ 1,796,514,149	$ 1,824,782,599

Table 3

Analysis of Normal Cost by Component

Benefit Component	Cost as % of Pay 2017	Cost as % of Pay 2016
(1)	(2)	(3)
1. Retirement benefit	8.32%	8.91%
2. Disability benefit	1.67%	1.77%
3. Death benefit	0.17%	0.18%
4. Vesting benefit	1.06%	1.08%
5. Refund of contributions	0.56%	0.56%
6. Gross normal cost (State normal cost)	11.78%	12.50%

Table 4-A

Calculation of Excess Investment Income
For Actuarial Value of Assets

Item	Plan Year Ending June 30			
	2017	2016	2015	2014
(1)	(2)	(3)	(4)	(5)
1. Net investment income for year	133,167,344	(60,344,123)	25,383,457	234,208,606
2. Expenses and fees for year	130,076	118,199	91,542	43,282
3. Actual net investment income based on market value of assets (Item 1 - Item 2)	133,037,268	(60,462,322)	25,291,915	234,165,324
4. Market value of assets (beginning of year)	1,304,869,720	1,443,476,294	1,492,232,721	1,326,022,360
5. Contributions during year				
a. Employee	9,143,408	9,379,784	9,138,451	8,884,829
b. State	19,175,401	19,231,804	19,059,012	18,614,507
c. Other	-	-	-	-
d. Total	28,318,809	28,611,588	28,197,463	27,499,336
6. Benefits paid during year	109,874,806	105,056,553	100,328,585	93,712,721
7. Refunds paid during year	2,029,791	1,699,287	1,917,221	1,741,876
8. Expected net investment income at 8.0%				
a. Market value of assets (beginning of year)	104,389,578	115,478,104	119,378,618	106,081,789
b. Contributions	1,132,752	1,144,464	1,127,899	1,099,973
c. Benefits	(4,394,992)	(4,202,262)	(4,013,143)	(3,748,509)
d. Refunds	(81,192)	(67,971)	(76,689)	(69,675)
e. Total	101,046,146	112,352,335	116,416,685	103,363,578
9. Excess investment income for year (Item 3 - Item 8e)	31,991,122	(172,814,657)	(91,124,770)	130,801,746

Table 4-B

Development of Actuarial Value of Assets

Item	2017	2016
(1)	(2)	(3)
1. Excess/(Shortfall) of invested income for current and previous years		
a. Current year	$ 31,991,122	$ (172,814,657)
b. Current year - 1	(172,814,657)	(91,124,770)
c. Current year - 2	(91,124,770)	130,801,746
d. Current year - 3*	130,801,746	63,564,289
e. Total	$ (101,146,559)	$ (69,573,392)
2. Deferral of excess/(shortfall) of invested income for current and previous years		
a. Current year (75%)	$ 23,993,342	$ (129,610,993)
b. Current year - 1 (50%)	(86,407,329)	(45,562,385)
c. Current year - 2 (25%)	(22,781,193)	32,700,437
d. Current year - 3 (0%)*	-	-
e. Total deferred	$ (85,195,180)	$ (142,472,941)
3. Market value of plan assets (end of year)	$ 1,354,321,200	$ 1,304,869,720
4. Preliminary AVA (end of year) (Item 3 - Item 2f)	$ 1,439,516,380	$ 1,447,342,661
5. AVA corridor		
a. 80% of MVA, EOY	$ 1,083,456,960	$ 1,043,895,776
b. 120% of MVA, EOY	$ 1,625,185,440	$ 1,565,843,664
6. Actuarial value of plan net assets	$ 1,439,516,380	$ 1,447,342,661
7. Actuaril value of assets prior to method change	$ 1,439,516,380	$ 1,447,342,661
8. Increase/(Decrease) in actuarial value of assets due to method change	N/A	N/A

* Actuaial value of assets was marked to market June 30, 2012
Prior years' bases set to zeros

Table 5

Development of Years to Fund Unfunded Actuarial Liability

	June 30, 2017 (1)	June 30, 2016 (2)
A. Basic Data		
1. Annualized salaries (excludes DROP participants)	$ 141,154,763	$ 141,906,487
2. Projected payroll for upcoming fiscal year	$ 150,586,955	$ 152,220,866
3. State normal cost	11.78%	12.50%
4. Contribution rate for funding unfunded accrued liability		
a. Total contribution rate	18.90%	18.90%
b. Less normal cost rate	(11.78%)	(12.50%)
c. Total contribution rate available	7.12%	6.40%
5. Actuarial accrued liability for active members		
a. Present value of future benefits for active members	$ 680,152,759	$ 724,464,127
b. Less present value future normal cost	(122,016,636)	(130,037,374)
c. Less present value of Tier II DROP contributions	(5,389,587)	(5,534,603)
d. Actuarial accrued liability	$ 552,746,536	$ 588,892,150
B. Development of Funding Period		
6. Total actuarial accrued liability		
a. Present value of benefits currently being paid	$ 1,106,377,527	$ 1,090,063,509
b. Actuarial accrued liability for active members (Item 5d)	552,746,536	588,892,150
c. Present value of deferred vested benefits	9,119,875	9,474,088
d. Present value of non-vested benefits	863,988	780,875
e. Other liabilities	0	0
f. Total	$ 1,669,107,926	$ 1,689,210,622
7. Current assets	$ 1,439,516,380	$ 1,447,342,661
8. Unfunded actuarial accrued liability (Item 6f - Item 7)	$ 229,591,546	$ 241,867,961
9. Amount of contribution available to fund unfunded actuarial accrued liability*	$ 11,329,298	$ 10,430,670
10. Years to fund unfunded actuarial accrued liability based on 3.00% payroll growth	77.6 years	Infinite

*Includes estimated impact of DROP Tier II contributions

Table 6

Change in Plan Net Assets

	Year Ending as of June 30, 2017 (1)	Year Ending as of June 30, 2016 (2)
I. Plan Net Assets, beginning of year		
A. Value reported in prior valuation	$ 1,304,869,720	$ 1,443,476,293
B. Prior period adjustments	$ -	1
C. Revised value	$ 1,304,869,720	$ 1,443,476,294
II. Additions		
A. Contributions		
1. Employee Contributions	$ 9,143,408	$ 9,379,784
2. State Contributions	$ 19,175,401	19,231,804
3. Reinstatements and Other		
a. Principal	$ -	-
b. Interest	$ -	-
c. Other	$ -	-
d Total	$ -	-
4. Total Contributions	$ 28,318,809	$ 28,611,588
B. Investment Income		
1. Interest	$ 6,728,227	$ 6,822,301
2. Dividends	$ 17,897,271	16,701,557
3. Net Gains	$ 116,623,355	(75,859,083)
4. Subtotal	$ 141,248,853	(52,335,225)
5. less Investment Expenses	$ (8,081,509)	(8,008,898)
6. Net Investment Income	$ 133,167,344	$ (60,344,123)
C. Total Additions	$ 161,486,153	$ (31,732,535)
III. Deductions		
A. Refunds	$ 2,029,791	$ 1,699,287
B. Benefit Payments	109,874,806	105,056,553
C. Other	-	-
D. Administrative Expenses	130,076	118,199
E. Total Deductions	$ 112,034,673	$ 106,874,039
IV. Net Change	$ 49,451,480	$ (138,606,574)
V. Plan Net Assets, end of year	$ 1,354,321,200	$ 1,304,869,720
VI. Market value yield		
A. Beginning of year net market assets	$ 1,304,869,720	$ 1,443,476,294
B. Investment income net of all expenses	$ 133,037,268	$ (60,462,322)
C. End of year market assets	$ 1,354,321,200	$ 1,304,869,720
D. Estimated market value yield	10.53%	-4.31%
VII. Actuarial value yield		
A. Beginning of year actuarial assets	$ 1,447,342,661	$ 1,430,527,926
B. Investment income net of all expenses	$ 75,759,507	$ 94,958,987
C. End of year actuarial assets	$ 1,439,516,380	$ 1,447,342,661
D. Estimated actuarial value yield	5.39%	6.82%

Table 7

Plan Net Assets
(Assets at Fair Value)

ASSET BALANCES	June 30, 2017 (1)	June 30, 2016 (2)
1. Current assets		
a. Cash in State Treasury	$ 278,665	$ 316,612
b. Cash in bank	27	$ 4
c. Accounts receivable		
i. Member contributions	204,201	$ 498,759
ii. State contributions	1,328,447	$ 1,035,876
iii. Miscellaneous	8,493,577	$ 1,494,020
iv. DROP plan	-	$ -
d. Interest and dividends receivable	1,578,058	$ 1,702,932
e. Short-term investments	74,574,787	$ 195,884,803
f. Total current assets	$ 86,457,762	$ 200,933,006
2. Long-term investments		
a. U.S. Government agency obligations	$ 80,821,738	$ 108,017,423
b. Corporate bonds	187,109,301	139,759,261
c. Common stock	1,026,234,099	860,324,064
d. Total long-term investments	$ 1,294,165,138	$ 1,108,100,748
3. Total assets	$ 1,380,622,900	$ 1,309,033,754
4. Liabilities	(26,301,700)	(4,164,034)
5. Total market value of net assets available for benefits (item 3 + item 4)	$ 1,354,321,200	$ 1,304,869,720
6. Allocation of invested assets, including cash		
a. Invested cash	5.5%	15.0%
b. U.S. Government agency obligations	5.9%	8.3%
c. Corporate bonds	13.7%	10.7%
d. Common stock	74.9%	66.0%
e. Total investments	100.0%	100.0%

Table 8

Actual Versus Expected Actuarial Assets

Item	Valuation as of June 30, 2017	Valuation as of June 30, 2016
(1)	(2)	(3)
1. Actuarial assets, beginning of year	$ 1,447,342,661	$ 1,430,527,926
2. Total contributions during year	28,318,809	28,611,588
3. Benefits paid during year	(109,874,806)	(105,056,553)
4. Refunds paid during year	(2,029,791)	(1,699,287)
5. Assumed net investment income at 8.0%		
a. Beginning of year assets	115,787,413	114,442,234
b. Contributions	1,132,752	1,144,464
c. Benefits	(4,394,992)	(4,202,262)
d. Refunds	(81,192)	(67,971)
e. Total	$ 112,443,981	$ 111,316,465
6. Expected actuarial assets, end of year (Sum of Items 1 through 5)	$ 1,476,200,854	$ 1,463,700,139
7. Actuarial assets, end of year prior to asset method change	$ 1,439,516,380	$ 1,447,342,661
8. Asset gain/(loss) for year (Item 7 - Item 6)	$ (36,684,474)	$ (16,357,478)
9. Asset gain/(loss) as percentage of end of year assets (Item 8 / Item 7)	(2.55%)	(1.13%)
10. Final actuarial value of assets after method change	$ 1,439,516,380	$ 1,447,342,661

Table 9

Actuarial Gain or Loss for the Year

Item	Valuation as of June 30, 2017	Valuation as of June 30, 2016
(1)	(2)	(3)
A. Calculation of total actuarial gain or loss		
1. Unfunded actuarial accrued liability (UAAL), previous year	$ 241,867,961	$ 198,748,161
2. Normal cost for the year	18,275,116	18,935,318
3. Contributions for the year	(28,318,809)	(28,611,588)
4. Interest at 8.0%		
a. On UAAL	$ 19,349,437	$ 15,899,853
b. On normal cost	731,005	757,413
c. On contributions	(1,132,752)	(1,144,464)
d. Total	$ 18,947,690	$ 15,512,802
5. Expected UAAL (sum of Items 1 - 4)	$ 250,771,958	$ 204,584,693
6. Actual UAAL	$ 229,591,546	$ 241,867,961
7. Gain (loss) for the year (Item 5 - Item 6)	$ 21,180,412	$ (37,283,268)
B. Source of gains and losses		
8. a. Asset gain (loss) for the year (Table 8)	$ (36,684,474)	$ (16,357,478)
b. Gain (loss) from change in assumptions	0	0
c. Gain (loss) from change in methods	0	0
d. Gain (loss) from Legislative changes	70,591,509	0
9. Asset gain (loss) as percentage of actuarial assets	(2.55%)	(1.13%)
10. Total actuarial accrued liability gain (loss) for the year (Item 7 - Item 8a - Item 8b - Item 8c)	$ (12,726,623)	$ (20,925,790)
11. Analysis of actuarial accrued liability gain (loss)		
a. Assumption changes	0	0
b. Method changes	0	0
c. Legislative changes	70,591,509	0
d. Experience liability gain (loss) for the year	(12,726,623)	(20,925,790)
e. Total actuarial accrued liability gain (loss)	$ 57,864,886	$ (20,925,790)
12. Experience liability gain (loss) as percentage of total actuarial liability (Item 11d as % of total actuarial accrued liability $1,689,210,622 as of June 30, 2016, and $1,669,107,926 as of June 30, 2017)	(0.76%)	(1.24%)

Table 10

Analysis of Change in Funding Period

Basis	Unfunded Actuarial Accrued Liability ($ millions)	Normal Cost	Funding Period (in years)	Attributable Change in Funding Period
(1)	(2)	(3)	(4)	(5)
1. Valuation as of June 30, 2016	$241.868	12.50%	Infinite	0.0
2. Valuation as of June 30, 2017, using expected assets and expected liabilities	$250.772	12.50%	Infinite	N/A
3. Valuation as of June 30, 2017, using actual assets and expected liabilities (asset gain/loss)	$287.456	12.50%	Infinite	N/A
4. Valuation as of June 30, 2017, using actual assets and actual liabilities	$300.183	12.50%	Infinite	N/A
5. Valuation as of June 30, 2017, using actual assets and actual liabilities, after assumption changes but before method changes	$300.183	12.50%	Infinite	N/A
6. Valuation as of June 30, 2017, using actual assets and actual liabilities, after assumption and after legislative changes	$229.592	11.78%	77.6	N/A

Table 11

History of Cash Flow

Year Ending June 30, (1)	Contributions for the Year[1] (2)	Expenditures During the Year: Benefit Payments (3)	Refund of Contributions (4)	Expenses[2] (5)	Total (6)	External Cash Flow for the Year[3] (7)	Market Value of Assets (8)	External Cash Flow as Percent of Market Value (9)
1997	21,897,263	(23,593,197)	(902,144)	(1,274,552)	(25,770,613)	(3,873,350)	629,060,314	(0.6%)
1998	20,633,572	(26,568,398)	(1,136,396)	(1,443,527)	(29,148,321)	(8,514,749)	758,971,958	(1.1%)
1999	21,460,290	(27,868,587)	(1,218,372)	(1,776,862)	(30,863,821)	(9,403,531)	870,332,321	(1.1%)
2000	20,635,998	(32,437,078)	(860,532)	(2,231,766)	(35,529,375)	(14,893,377)	1,020,171,033	(1.5%)
2001	21,319,262	(35,505,451)	(1,134,443)	(3,179,023)	(39,818,918)	(18,499,656)	998,671,310	(1.9%)
2002	23,395,271	(40,606,836)	(658,917)	(3,545,184)	(44,810,937)	(21,415,666)	875,304,832	(2.4%)
2003	23,656,596	(48,128,153)	(907,236)	(4,056,463)	(53,091,851)	(29,435,255)	891,122,027	(3.3%)
2004	23,623,171	(51,764,755)	(604,562)	(3,736,002)	(56,105,319)	(32,482,148)	981,026,764	(3.3%)
2005	23,814,179	(53,952,761)	(974,389)	(4,157,579)	(59,084,730)	(35,270,551)	1,041,898,315	(3.4%)
2006	23,956,626	(57,570,547)	(790,218)	(4,295,209)	(62,655,974)	(38,699,348)	1,098,788,670	(3.5%)
2007	23,742,542	(62,317,277)	(1,243,841)	(4,458,889)	(68,020,007)	(44,277,465)	1,186,151,377	(3.7%)
2008	24,286,799	(65,483,982)	(1,154,502)	(4,584,201)	(71,222,685)	(46,935,886)	1,242,354,294	(3.8%)
2009	24,730,528	(69,635,808)	(861,725)	(4,726,929)	(75,224,462)	(50,493,934)	994,466,871	(5.1%)
2010	26,691,696	(73,650,896)	(803,288)	(4,176,401)	(78,630,585)	(51,938,889)	1,052,235,399	(4.9%)
2011	26,574,184	(77,553,673)	(960,668)	(5,253,653)	(83,767,994)	(57,193,810)	1,298,501,306	(4.4%)
2012	26,521,075	(82,216,303)	(912,512)	(5,861,735)	(88,990,550)	(62,469,475)	1,230,012,388	(5.1%)
2013	26,712,669	(89,037,007)	(1,084,539)	(6,542,055)	(96,663,601)	(69,950,932)	1,326,032,436	(5.3%)
2014	27,499,336	(93,712,721)	(1,741,876)	(6,650,036)	(102,104,633)	(74,605,297)	1,492,232,422	(5.0%)
2015	28,197,463	(100,328,585)	(1,917,221)	(7,883,940)	(110,129,746)	(81,932,283)	1,443,476,293	(5.7%)
2016	28,611,588	(105,056,553)	(1,699,287)	(8,127,098)	(114,882,938)	(86,271,350)	1,304,869,720	(6.6%)
2017	28,318,809	(109,874,806)	(2,029,791)	(8,211,585)	(120,116,182)	(91,797,373)	1,354,321,200	(6.8%)

[1] Column (2) includes employee and employer contributions, as well as any account reinstatement receipts during the year

[2] Column (5) includes both administrative and investment expenses

[3] Column (7) = Column (2) + Column (6)

Table 12

Statistical Information

	June 30, 2017 (1)	June 30, 2016 (2)
A. Number		
1. Active members not in DROP		
a. Male members	2,673	2,757
b. Female members	635	649
c. Total active members	3,308	3,406
2. Inactive vested members	217	206
B. Annualized Salaries For Active Members Not in DROP		
1. Male members	$ 113,875,306	$ 114,534,894
2. Female members	27,279,457	27,371,593
3. Total active members	$ 141,154,763	$ 141,906,487
4. Average annual salary	$ 42,671	$ 41,664
C. Accumulated Member Contributions	$ 131,043,340	$ 131,837,948
D. Active Members in DROP		
1. Number	355	364
2. DROP Balance	$ 42,263,293	$ 43,885,101
3. Average DROP Balance	$ 119,052	$ 120,563
E. Persons Receiving Benefits		
1. Number		
a. Life annuities	2,411	2,371
b. Disability annuities	424	405
c. Survivor annuities	544	525
d. Total persons receiving benefits	3,379	3,301
2. Annual annuities*		
a. Life annuities	$ 81,068,677	$ 77,756,865
b. Disability annuities	7,081,242	6,718,265
c. Survivor annuities	8,091,704	7,678,262
d. Total persons receiving benefits	$ 96,241,623	$ 92,153,392

* Annual annuities before adding July 1st COLA

Table 13

Age and Service Distribution

	Years of Credited Service														
Attained Age	0	1	2	3	4	5-9	10-14	15-19	20-24	25-29	30-34	35 & Over	Number of Employees	Total Annual Salary	Average Annual Salary
Under 20	3	1	0	0	0	0	0	0	0	0	0	0	4	$ 86,453	$ 21,613
20-24	59	73	43	24	11	4	0	0	0	0	0	0	214	6,056,217	28,300
25-29	34	52	54	49	36	55	0	0	0	0	0	0	280	10,155,378	36,269
30-34	42	43	50	34	26	111	48	1	0	0	0	0	355	14,545,666	40,974
35-39	37	40	34	29	21	78	100	65	4	0	0	0	408	17,909,223	43,895
40-44	23	30	34	23	16	75	91	76	45	4	0	0	417	19,562,712	46,913
45-49	25	25	35	25	22	81	86	66	55	54	1	0	475	22,498,489	47,365
50-54	18	34	31	14	22	73	80	66	75	106	0	0	519	24,394,947	47,004
55-59	17	22	23	12	14	87	61	57	61	51	2	0	407	17,093,698	41,999
60-64	3	10	9	22	7	48	56	28	13	4	0	0	200	7,766,606	38,833
65 & Up	2	0	6	1	3	7	10	0	0	0	0	0	29	1,085,374	37,427
Total	263	330	319	233	178	619	532	359	253	219	3	0	3,308	$ 141,154,763	$ 42,671

Note: Excludes DROP participants.

Table 14

Distribution of Service and Current Rate of Compensation

Completed Years of Service	Number of Employed Participants	Total Annual Plan Compensation	Total Average Plan Compensation
(1)	(2)	(3)	(4)
0	263	$ 7,302,180	$ 27,765
1	330	10,173,076	30,828
2	319	10,643,698	33,366
3	233	8,465,927	36,334
4	178	6,809,496	38,256
5-9	619	26,030,998	42,053
10-14	532	24,814,646	46,644
15-19	359	18,666,079	51,995
20-24	253	13,799,481	54,543
25-29	219	14,220,832	64,935
30-34	3	228,348	76,116
35 & up	-	-	-
Total	3,308	$ 141,154,761	$ 42,671

Note: Excludes DROP participants.

Table 15-A

Distribution of Retired Members by Years Since Retirement as of June 30, 2017

SERVICE RETIREDS

Years Since Retirement	Number	Member Total Benefit	Member Average Benefit
(1)	(2)	(3)	(4)
0	115	$ 3,149,929	$ 27,391
1	103	2,764,791	26,843
2	144	4,351,667	30,220
3	138	4,013,847	29,086
4	161	4,637,486	28,804
5-9	550	18,253,684	33,189
10-14	438	14,297,020	32,642
15-19	399	15,272,385	38,277
20-24	204	8,406,014	41,206
25-29	108	4,059,337	37,586
30-34	41	1,575,934	38,437
35 & up	10	286,583	28,658
Total	2,411	$ 81,068,677	$ 33,625

* Annual annuities before adding COLA

Table 15-B

Distribution of Retired Members by Years Since Retirement as of June 30, 2017

DISABLED RETIREDS

Years Since Retirement	Member Number	Total Benefit	Average Benefit
(1)	(2)	(3)	(4)
0	21	$ 187,609	$ 8,934
1	21	299,747	14,274
2	23	286,939	12,476
3	31	493,284	15,912
4	17	217,790	12,811
5-9	80	1,194,843	14,936
10-14	95	1,566,677	16,491
15-19	70	1,372,097	19,601
20-24	40	948,992	23,725
25-29	15	315,348	21,023
30-34	3	76,331	25,444
35 & up	8	121,582	15,198
Total	424	$ 7,081,239	$ 16,701

* Annual annuities before adding COLA

Table 15-C

Distribution of Retired Members by Years Since Retirement as of June 30, 2017

BENEFICIARIES

Years Since Retirement	Member		
	Number	Total Benefit	Average Benefit
(1)	(2)	(3)	(4)
0	35	$ 571,153	$ 16,319
1	44	567,198	12,891
2	36	502,608	13,961
3	29	514,857	17,754
4	48	722,944	15,061
5-9	113	1,912,278	16,923
10-14	151	2,236,223	14,809
15-19	24	268,837	11,202
20-24	22	269,973	12,272
25-29	16	229,206	14,325
30-34	17	208,606	12,271
35 & up	9	87,822	9,758
Total	544	$ 8,091,705	$ 14,874

* Annual annuities before adding COLA

Table 16-A

Distribution of Retired Members by Age as of June 30, 2017

SERVICE RETIREDS

Age	Number	Member Total Benefit	Average Benefit
(1)	(2)	(3)	(4)
Up to 40	-	$ -	$ -
40-45	-	-	-
45-49	2	83,959	41,980
50-54	29	969,667	33,437
55-59	154	5,390,047	35,000
60-64	396	13,678,821	34,542
65-69	620	20,309,871	32,758
70-74	479	15,358,117	32,063
75-79	343	11,559,536	33,701
80-84	232	8,856,941	38,176
85-89	96	3,252,810	33,883
90-94	45	1,209,939	26,888
95 & up	15	398,969	26,598
Total	2,411	$ 81,068,677	$ 33,625

* Annual annuities before adding COLA

Table 16-B

Distribution of Retired Members by Age as of June 30, 2017

DISABLED RETIREDS

		Member	
Age	Number	Total Benefit	Average Benefit
(1)	(2)	(3)	(4)
Up to 40	3	$ 18,536	$ 6,179
40-45	11	128,972	11,725
45-49	19	293,480	15,446
50-54	48	711,129	14,815
55-59	71	1,061,125	14,945
60-64	85	1,288,803	15,162
65-69	90	1,525,049	16,945
70-74	54	1,045,606	19,363
75-79	25	611,567	24,463
80-84	10	239,389	23,939
85-89	5	121,838	24,368
90-94	2	23,853	11,927
95 & up	1	11,895	11,895
Total	424	$ 7,081,242	$ 16,701

* Annual annuities before adding COLA

Table 16-C

Distribution of Retired Members by
Age as of June 30, 2017

BENEFICIARIES

Age	Number	Member Total Benefit	Member Average Benefit
(1)	(2)	(3)	(4)
Up to 40	13	$ 165,576	$ 12,737
40-45	5	56,636	11,327
45-49	9	148,012	16,446
50-54	18	226,377	12,577
55-59	34	471,242	13,860
60-64	54	644,721	11,939
65-69	62	804,079	12,969
70-74	81	1,191,411	14,709
75-79	77	1,273,297	16,536
80-84	67	1,104,661	16,487
85-89	59	1,093,143	18,528
90-94	48	702,645	14,638
95 & up	17	209,904	12,347
Total	544	$ 8,091,704	$ 14,874

* Annual annuities before adding COLA

APPENDIX 1

Summary of Benefit Provisions of the Retirement System
(As Most Recently Amended on June 30, 2017; System is established July 1, 1949)

A. NORMAL SERVICE RETIREMENT

1. Eligibility:

   Earliest of the following:

   (a) Completion of 28 years of creditable service,

   (b) Age 60 and 20 years of creditable service,

   (c) Age 62 and 15 years of creditable service,

   (d) Age 65 and 5 years of creditable service.

2. Benefit Formula:

   Years of credited service times 2.2% of Final Average Compensation, plus post retirement health care supplements. The minimum annual normal retirement benefit is $1,800. The health care supplements are depended on years of service at retirement, the benefits are provided as follows:

   (a) For members who retired before or on June 30, 2009: $1,500 health care offset amount will be provided.

   (b) For members who retire after June 30, 2009:

   1. With less than 10 years of accrued service: No health care offset amount will be provided.
   2. With 10 or more years of accrued service but less than 15 years of accrued service at retirement: $900 health care offset amount will be provided.
   3. With 15 or more years of accrued service but less than 20 years of accrued service at retirement: $1,200 health care offset amount will be provided.
   4. With 20 or more years of accrued service at retirement: $1,500 health care offset amount will be provided.

   For members who retire after June 30, 2013 the health care offset is prorated for any service earned with a reciprocal retirement system.

3. Final Average Compensation:

Highest 3 year average.

4. Normal Form:

Monthly benefit for life of Member plus, upon death, a refund of the excess (if any) of (i) the Member's accumulated contribution account at time of retirement over (ii) the total annuity payments received.

5. Optional Forms:

Option A 10 years certain or life, or

Option B joint and 50% contingent survivor, with a pop up to the life only amount if the joint pensioner predeceases the member.

B. DEFERRED RETIREMENT OPTION PLAN (DROP)

Eligibility:

Earliest of the following:

(a) Completion of 30 years of creditable service,

(b) Age 60 and 20 years of creditable service,

(c) Age 62 and 15 years of creditable service,

(d) Age 65 and 5 years of creditable service.

Active members eligible for normal retirement are eligible to participate in the DROP program while continuing active employment. During DROP, the member will receive the regular retiree cost of living adjustments. A member can remain in DROP to the later of age 65 or the completion of five years of participation in DROP. DROP is divided into Tier I and Tier II. Tier I consists of the first five years of DROP participation, while Tier II is the remaining period. In Tier I, 90% of the retirement annuity will be deposited in the DROP account, whereas in Tier II, 79% of the retirement annuity will be deposited. The DROP account is credited with interest in Tier I and Tier II (as set by the Board, currently 6%). Furthermore, the member and employer contributions cease during DROP until the member enters Tier II; during Tier II participation, the member contributes 6.00% of their total payroll earnings and the employer contributes 6.90%. At actual retirement, the member will receive the DROP balance and commence receiving the regular annuity payments.

APPENDIX 1 (Continued)

C. EARLY SERVICE RETIREMENT

1. Eligibility:

   Age 55 with 5 or more years of creditable service.

2. Benefit Formula:

   Normal retirement benefit earned to the date of retirement, reduced .8% for each of the first 60 months and .3% for each of the next 60 months that the early retirement date precedes the normal retirement date. The minimum annual early retirement benefit is $1,800.

D. DISABILITY RETIREMENT

1. Less than 1 Year of Creditable Service: Refund of member contributions without interest.
2. At least 1 Year of Creditable Service: Refund of member contributions with interest. Interest credits are currently 5% per annum.
3. At least 5 or more Years of Creditable Service: If he leaves his contribution account on deposit, a monthly annuity payable to the member for life based upon his years of creditable service and commencing upon disability.

E. TERMINATION OF SERVICE

1. Less than 1 Year of Creditable Service: Refund of member contributions without interest.
2. At least 1 Year of Creditable Service: Refund of member contributions with interest. Interest credits are currently 5% per annum.
3. At least 5 or more Years of Creditable Service: If he leaves his contribution account on deposit, a monthly annuity payable to the member for life based upon his years of creditable service and commencing upon eligibility for retirement.

F. DEATH BEFORE RETIREMENT

1. Less than 1 Year of Creditable Service: Refund of member contributions without interest.
2. At least 1 Year of Creditable Service: Refund of member contributions with interest.

3. At least 5 Years of Creditable Service: If the beneficiary leaves the Member's contribution account on deposit, an annuity payable under either Option A or B as elected by the beneficiary and commencing at the time the Member would have become eligible for retirement.

(a) Option A a reduced annuity payable for 10 years in an amount equal to what the member would have received under retirement Option A.

(b) Option B an annuity payable for the life of the beneficiary in an amount equal to 50% of what the member would have received under retirement Option B.

4. An additional death benefit equal to $15,000.

G. DEATH AFTER RETIREMENT

If no option was elected, refund of the excess (if any) of (i) the Member's accumulated account (including interest) at retirement over (ii) the total annuity payments received. If an option is elected, death benefits are payable in accordance with such option.

An additional lump sum death benefit of $7,500 is provided for retirees (not beneficiaries).

H. AUTOMATIC POST RETIREMENT BENEFIT INCREASES

Benefits increase by 1 1/2% of the base benefit each year after June 30, 1976 through June 30, 1978, by 3% of the base benefit each year after June 30, 1978, through June 30, 1995, and by 3% of the previous year's benefit each year after June 30, 1995 for those who are retired for at least one year on the July 1 determination date. This benefit was limited by the Consumer Price Index until June 30, 1999. Effective July 1, 1999, the benefit increase is 3% with no ties to the Consumer Price Index. Effective July 1 2017, the benefit increase will be the lesser of 3% or the percentage change in the Consumer Price Index for Urban Wage Earners and Clerical Workers as determined by the United States Department of Labor over the one-year period ending in the December immediately preceding the date of which the redetermined amount is being calculated. However, the redetermined amount of the benefit to be paid shall not be less than the redetermined amount of the benefit paid in the preceding year.

I. EMPLOYER CONTRIBUTIONS

The State contributes 12.90% of the total payroll earnings of members, excluding DROP participants. The State does not contribute for members in the Tier I portion of DROP and contributes 6.9% of payroll for members in the Tier II portion of DROP.

APPENDIX 1 (Continued)

J. MEMBER CONTRIBUTIONS

1. Each Member must contribute 6% of his annual Compensation while in the service of the Employer. During participation in the Tier I portion of DROP a member's contributions are suspended.

2. Within certain terms, conditions, and limitations, a Member voluntarily may make additional contributions in order to obtain creditable service for prior service.

K. LEGISLATED PLAN CHANGES ENACTED BY THE 1991 LEGISLATURE OF THE STATE OF ARKANSAS

1. ACT 198 Provide a one-time payment equal to 3.0% of the July 1, 1991 annualized annuity for members retired on or prior to January 1, 1990.

2. ACT 243 Permit members to accrue more than 35 years of creditable service. (Retroactively applied).

3. ACT 245 Effective July 1, 1991, increase annuities by the sum of $50 per month for members receiving benefits prior to, on, or subsequent to July 1, 1991. The increase is also added to the base annuity.

4. ACT 246 Effective July 1, 1991, increase the benefit formula multiplier to 2.06% of average compensation times number of years of creditable service.

5. ACT 380 4.0% ad hoc increase payable on July 1, 1991 for those members retired on June 1, 1991, based on benefit payable on June 1, 1991. The increase is also added to the base annuity.

6. ACT 381 Benefits from reciprocal retirement systems are to be based on the highest final average salary at the time of retirement. (Retroactively applied).

L. LEGISLATED PLAN CHANGES ENACTED BY THE 1993 LEGISLATURE OF THE STATE OF ARKANSAS

1. ACT 929 2.9% ad hoc increase payable on July 1, 1993 for those members retired on June 1, 1993, based on benefits payable June 1, 1993. The increase is also added to the base annuity.

2. ACT 930 Effective July 1, 1993, the average compensation is based on a forty-eight (48) month averaging period. (Previously sixty (60) months.)

APPENDIX 1 (Continued)

M. LEGISLATED PLAN CHANGES ENACTED BY THE 1995 LEGISLATURE OF THE STATE OF ARKANSAS

1. ACT 407 Cost of living increase up to 3% of the member's previous year's benefit for those members retired for at least twelve full months after the effective date of each increase. Increases are effective July 1 and will be limited to the lesser of 3% or the Consumer Price Index but may not result in a decrease in benefits otherwise payable.

N. LEGISLATED 1997 PLAN CHANGES ENACTED BY THE 1997 LEGISLATURE OF THE STATE OF ARKANSAS

1. ACT 1067 Creates an active member death benefit of 10 years certain and life. Five years of service eligibility for benefit.
2. ACT 1089 Creates a $15,000 death benefit for active and vested-terminated members.
3. ACT 1073 Creates a DROP program for active members eligible for normal retirement.
4. ACT 386 Increases the multiplier from 2.06% to 2.10%. Grants 2.0% ad hoc to retirees.
5. ACT 349 Changes 48 month FAE to 36 months. Grants 2.2% ad hoc to retirees.
6. ACT 347 Changes 10 year vesting requirement to 5 years.

O. LEGISLATED 1999 PLAN CHANGES ENACTED BY THE 1999 LEGISLATURE OF THE STATE OF ARKANSAS

1. ACT 311 Increases the $50 per month supplement to $125 per month to current and future retirees.
2. ACT 1325 Active members can retire with full benefit if they have 28 years of creditable service.
3. ACT 335 Cost of living increase will be 3% and is not limited by the Consumer Price Index.

P. LEGISLATED 2001 PLAN CHANGES ENACTED BY THE 2001 LEGISLATURE OF THE STATE OF ARKANSAS

1. ACT 482 Provides $7,500 lump sum death benefit for retirees (not beneficiaries)
2. ACT 539 Increases the multiplier from 2.1% to 2.2%. Grant 4.8% ad hoc to retirees
3. Crediting 8% to the DROP account by taking a Board action.

APPENDIX 1 (Continued)

Q. LEGISLATED 2003 PLAN CHANGES ENACTED BY THE 2003 LEGISLATURE OF THE STATE OF ARKANSAS

1. ACT 776 Allows members who enter DROP prior to age 60 to remain in DROP until age 65, beyond the five year limit previously set. During this time, known as Tier II DROP, 79% of the retirement annuity will be deposited in the DROP account. Furthermore, the member contributes 6.00% of their total payroll earnings and the employer contributes 6.90%.

2. ACT 205 Changes the factors used for determining optional forms of payment to actuarially equivalent factors. Current retirees had their benefits increased to reflect the new factors effective July 1, 2003.

R. LEGISLATED 2009 PLAN CHANGES ENACTED BY THE 2009 LEGISLATURE OF THE STATE OF ARKANSAS

1. HB 1177 Changes from 5 years vesting requirement to 10 years vesting requirement on health care coverage. Prorated the $125 per month health care supplements as follows:
   a. With less than 10 years of service at retirement: No health care supplements
   b. With 10 or more years of service but less than 15 years of service at retirement: $75/month (or 60% of $125/month)
   c. With 15 or more years of service but less than 20 years of service at retirement: $100/month (or 80% of $125/month)
   d. With 20 or more years of service at retirement: $125/month (or100% of $125/month)

S. LEGISLATED 2011 PLAN CHANGES ENACTED BY THE 2011 LEGISLATURE OF THE STATE OF ARKANSAS

1. HB 1213 Establishes the cost for purchasing service credit as the actuarial equivalent cost. The actuarial cost is the increase in the liability associated with adding the additional service credit. This applies to all types of service credit including: military service, service with another State agency, and reinstatement of forfeited service.

T. LEGISLATED 2013 PLAN CHANGES ENACTED BY THE 2013 LEGISLATURE OF THE STATE OF ARKANSAS

1. HB 1224 Prorates the Health Care Offset paid by the Arkansas State Highway Employees Retirement System (ASHERS), for members who also have service in a reciprocal retirement system.

2. HB 1225 Excludes lump sum termination payments (accrued leave, compensation, etc.) from inclusion in the Average Compensation and credited service used in the determination of retirement benefits paid by the Arkansas State Highway Employees Retirement System (ASHERS).

U. LEGISLATED 2017 PLAN CHANGES ENACTED BY THE 2017 LEGISLATURE OF THE STATE OF ARKANSAS

1. ACT 610 Cost of living increase will be the lesser of 3% or the percentage change in the Consumer Price Index for Urban Wage Earners and Clerical Workers as determined by the United States Department of Labor over the one-year period ending in the December immediately preceding the date of which the redetermined amount is being calculated. However, the redetermined amount of the benefit to be paid shall not be less than the redetermined amount of the benefit paid in the preceding year.

2. ACT 461 A member of the Arkansas State Highway Employees' Retirement System may purchase creditable service in the retirement system, without interest, for a period not to exceed five years of service for active service by the member in the United States Armed Forces if the member (1) has five years of actual service in the system as of August 20, 2015; and (2) shows that he or she relied upon the ten-year service time requirement before applying to purchase military service credit under this ACT. The purchase of military service credit under this ACT shall be made in the form of a cash payment or automatic payroll deductions for period not to exceed three years.

APPENDIX 2

Summary of Assumptions and Methods

The actuarial assumptions were reviewed as part of an experience investigation performed in 2015 based on data through June 30, 2014. All of the assumptions shown below were affirmed or revised as part of the investigation.

ACTUARIAL ASSUMPTIONS

1. Investment Yield Rate (Effective June 30, 1997): 8.0% per annum, compounded annually.

2. Mortality:

   a. Healthy Post-retirement (Effective June 30, 2015)

   Male: RP-2000 Combined Healthy for males with Blue Collar adjustments, scaled at 105% with no setback. Generational mortality improvements in accordance with Scale AA from the table's base year of 2000 (both before and after the measurement date)

   Female: RP-2000 Combined Healthy for females with Blue Collar adjustments, scaled at 100% with no setback. Generational mortality improvements in accordance with Scale AA from the table's base year of 2000 (both before and after the measurement date)

   b. Disabled Post-retirement (Effective June 30, 2015)

   Male: RP-2000 Combined Healthy for males with Blue Collar adjustments, scaled at 105% with three year set-forward. Generational mortality improvements in accordance with Scale AA from the table's base year of 2000 (both before and after the measurement date), minimum 3% rate of mortality at all ages

   Female: RP-2000 Combined Healthy for females with Blue Collar adjustments, scaled at 100% with three year set-forward. Generational mortality improvements in accordance with Scale AA from the table's base year of 2000 (both before and after the measurement date), minimum 3% rate of mortality at all ages

   c. Healthy Pre-retirement (Effective June 30, 2015)

   Male: RP-2000 Combined Healthy for males with Blue Collar adjustments, scaled at 70% with no setback. Generational mortality improvements in accordance with Scale AA from the table's base year of 2000 (both before and after the measurement date)

   Female: RP-2000 Combined Healthy for females with Blue Collar adjustments, scaled at 70% with no setback. Generational mortality improvements in accordance with Scale AA from the table's base year of 2000 (both before and after the measurement date)

3. Retirement Rate (Effective June 30, 2015):

The following probabilities of retirement were assumed for members eligible to retire.

Age	Early Retirement Rate	Normal Retirement Rate	
	Males and Females	Males	Females
48		5.0%	5.0%
49		5.0%	5.0%
50		6.5%	5.0%
51		8.0%	6.0%
52		9.5%	7.0%
53		11.0%	8.0%
54		12.5%	9.0%
55	1.0%	14.0%	10.0%
56	1.0%	15.5%	15.0%
57	2.0%	20.0%	15.0%
58	2.0%	25.0%	25.0%
59	3.0%	25.0%	25.0%
60	3.0%	15.0%	15.0%
61	8.0%	20.0%	20.0%
62	20.0%	45.0%	45.0%
63	20.0%	25.0%	25.0%
64	15.0%	25.0%	25.0%
65		40.0%	40.0%
66		40.0%	40.0%
67		40.0%	40.0%
68		40.0%	40.0%
69		40.0%	40.0%
70		100.0%	100.0%

4. Disability Rates (Effective June 30, 2009): Rates based on the experience of other large public sector retirement systems through age 82; thereafter, Non Disabled Mortality is assumed.

Age	Rates of Decrement Due to Disability
20	.00192
25	.00192
30	.00192
35	.00192
40	.00480
45	.00624
50	.01176
55	.02136
60	.03384
65	.03984

5. Withdrawal Rates (for causes other than death, disability, or retirement)

   (Effective June 30, 2015): Select and ultimate withdrawal rates are used based on age and service. Sample rates are shown below

Probability of Decrement Due to Withdrawal						
			Years of Service			
			Male Members			
Age	0	1	2	3	4	5+
20	0.3712	0.2536	0.1697	0.1180	0.1150	0.1043
30	0.2925	0.1998	0.1313	0.0862	0.0756	0.0578
40	0.2193	0.1538	0.1024	0.0646	0.0477	0.0261
50	0.1628	0.1242	0.0894	0.0582	0.0368	0.0159
60	0.1342	0.1238	0.1033	0.0748	0.0462	0.0302
			Female Members			
Age	0	1	2	3	4	5+
20	0.4028	0.3008	0.2168	0.1509	0.1047	0.0761
30	0.2819	0.2118	0.1542	0.1093	0.0765	0.0571
40	0.1980	0.1483	0.1073	0.0752	0.0514	0.0366
50	0.1715	0.1250	0.0863	0.0550	0.0336	0.0171
60	0.1985	0.1391	0.0896	0.0481	0.0230	0.0007

6. Salary Scales (Effective June 30, 2015): Future compensation is assumed to increase by an inflation (growth) increase rate of 2.5% plus a productivity component of 1.00%, and plus a step-rate/promotional component based on service. Rates are illustrated below:

Years of Service	Step-rate/ Promotional Component	Total Salary Scale
(1)	(2)	(3)
0	7.00%	10.50%
1	7.00%	10.50%
2	7.00%	10.50%
3	2.00%	5.50%
4	1.25%	4.75%
5-13	0.75%	4.25%
14-17	0.50%	4.00%
18-19	0.25%	3.75%
20+	0.00%	3.50%

7. Future Increase in Total Payroll (Effective June 30, 2015): 3.0% per annum. Used for purposes of funding the Unfunded Actuarial Accrued Liability.

8. Cost of Living Increase (Effective June 30, 2017): All benefit in pay status are assumed to be increased by 2.25% annually.

9. Provision for Expense (Effective June 30, 1997): The assumed investment return rate represents the anticipated net rate of return after payment of all administrative and investment expenses.

10. Election Rates (Effective June 30, 2004): After their initial vesting, members are assumed to elect the greater value of their deferred annuity or a refund of their account balances. 100% of non-vested members are assumed to take a refund.

11. Election of DROP Entry (Effective June 30, 2015): 100% of participants who are eligible to enter DROP are assumed to elect to participate in DROP, except as noted below. Members who elect into DROP are assumed to retire at the normal retirement patterns. Members who first become eligible to DROP prior to age 60 (at 30 years of service) are assumed to enter DROP after attaining 31 years of service. Members past their first eligibility are assumed to enter DROP immediately.

12. Interest Crediting Rate on Drop Accounts (Effective June 30, 2012): 6.0% interest credit on DROP accounts.

13. Drop Accounts Payout Period (Effective June 30, 2015):it is assumed that members who participate in DROP will receive their DROP accounts in equal installments over a 10-year period.

<u>CHANGES IN ASSUMPTIONS SINCE PRIOR VALUATION</u>

There have been no changes to the actuarial assumptions and methods since the prior valuation.

ASSET VALUATION METHOD (Adopted June 30, 2015)

The actuarial value of assets is equal to the market value of assets less a four-year phase-in of the excess (shortfall) between expected investment return and actual income with the resulting value not being less than 80% or more than 120% of the market value of assets.

The actuarial value of assets was marked to the market for June 30, 2012 valuation. This was done to prevent an expected divergence away from the market value of assets.

ACTUARIAL COST METHOD

The funding period required to amortize the unfunded actuarial accrued liability (UAAL) is determined using the Entry Age Actuarial Cost Method.

The Individual Entry Age Normal actuarial cost method assigns the plan's total unfunded liabilities (the actuarial present value of future benefits less the actuarial value of assets) to various periods. The unfunded actuarial accrued liability is assigned to years prior to the valuation, and the normal cost is assigned to the year following the valuation. The remaining costs are the normal costs for future years. Then each year's contribution is composed of (i) that year's normal cost, plus (ii) a payment used to reduce the unfunded actuarial accrued liability.

The normal contribution is determined using the Entry Age Normal method. Under this method, a calculation is made to determine the rate of contribution which, if applied to the compensation of each individual member during the entire period of anticipated covered service (prior to DROP entry), would be required to meet the cost of all benefits payable on his behalf. The salary-weighted average of these rates is the normal cost rate. This calculation reflects the plan provisions that apply to each individual member. The employer normal cost rate is equal to (i) the normal cost rate, minus (ii) the member contribution rate.

The actuarial accrued liability is the difference between the total present value of future benefits and the actuarial present value of future normal costs. The unfunded actuarial accrued liability (UAAL) is the excess of the actuarial accrued liability over the actuarial value of assets.

Since the State statutes governing the System establish the current employee and State contribution rates, the actuarial valuation determines the number of years required to amortize (or fund) the UAAL on a level percentage of payroll basis, taking into account the payroll growth assumption and the normal cost expressed as a percent of pay. Because of this amortization procedure, any change in the unfunded actuarial accrued liability due to (i) actuarial gains and losses, (ii) changes in actuarial assumptions, or (iii) amendments, affects the funding period.

FUNDING OF UNFUNDED ACTUARIAL ACCRUED LIABILITY

The total normal cost for benefits provided by the System is 12.50% of payroll, which is 6.40% of payroll less than the total contributions required by Law (12.90% from State plus 6% from employees). 12.50% of the State's 12.90% contribution is required to meet the normal cost, and the remaining 0.40% along with the 6.00% from the employee contribution plus any contributions received on behalf of members in Tier II of DROP are assumed to be utilized to fund the unfunded actuarial accrued liability over a period of years in the future, assuming that total payroll is increased by 3.0% per year

GLOSSARY

Definition of Actuarial Terms

In our report we have attempted to avoid the use of multitude of complex actuarial terminology, but we realize that different users of our reports may have differing opinions as to what constitutes an "actuarial term". Accordingly, we offer the following definitions of several terms contained in this report which might be considered actuarial in nature. Any qualified user of our report who believes that additional terms should be included is invited to communicate such terms either directly to us or through the Arkansas State Highway Employees Retirement System.

1. Actuarial Accrued Liability - for benefits payable in the future to the present members, it will equal the present value of benefits payable in the future to them less the present value of future normal costs.

2. Actuarial Value of Assets - the market value of assets of the System adjusted to recognize investment earnings above or below the investment return assumption uniformly over a five year period.

3. Actuarial Assumptions - assumptions as to future experience under the System. Current actuarial assumptions are detailed in Appendix 2 of the current annual valuation report. Assumptions include future fund earnings rates, rates of future salary increases, and rates of death (both before and after retirement), disability, retirement, and withdrawal.

4. Actuarially Determined - values which have been determined utilizing the principles of actuarial science. An actuarially determined value is derived by application of the appropriate actuarial assumptions to specified values determined by provisions of the law.

5. Actuarial Gain or Actuarial Loss - a measure of the difference between actual experience and assumed experience of the System. Through the actuarial assumptions, rates of decrements, rates of salary increases, and rates of fund earnings have been forecasted. To the extent that actual experience differs from that assumed, actuarial liabilities emerge which may be the same as forecasted or they may be larger or smaller than projected. Actuarial gains are due to favorable experience, i.e., the System's assets earn more than projected, salaries do not increase as fast as assumed, members retire later than assumed, etc. Favorable experience means actual results produce actuarial liabilities not as large as projected by the actuarial assumptions. On the other hand, actuarial losses are the result of unfavorable experience, i.e., actual results that produce actuarial liabilities which are larger than projected. Actuarial gains will shorten the time required for funding of the unfunded actuarial accrued liability while actuarial losses will lengthen the funding period.

6. Actuarial Liabilities - the actuarially determined present value of future benefits to be provided by the System. There are separate actuarially determined present values for retired members and non retired members. The term "reserve" may be used interchangeably with "present value" or "liability". When applied to active members, it takes into account benefits which will be earned through future service and future salary increases.

Glossary (Continued)

7. Defined Benefits - in a retirement plan, benefits which are defined by a specific formula applied to a specific member compensation and/or specific years of service. The amount of the benefit is not a function of contributions or actual earnings on those contributions.

8. Future Benefits - benefits specified in the law which will become payable at some time in the future when the member satisfies the requirement to receive such benefits.

9. Future Contributions - contributions to be made by the member or the State in the future, as required by the law.

10. Funding Period - the number of years in the future that will be required to fund (i.e., pay off or eliminate) the unfunded actuarial accrued liability, based on the actuarial assumptions and assuming no future actuarial gains or losses.

11. Normal Cost - the average annual actuarial cost of the benefits provided by the System for the current employees.

12. Present Value - the actuarially determined lump sum value as of the valuation date of a series of payments to be made in the future, where the lump sum value is equal to the sum of the discounted value of each future payment. The discounted value of each payment is the product of (a) the amount of the payment, (b) the probability that the payment will be made (based on the current actuarial assumptions as to the future experience), and (c) the time value of money (based on the current assumed interest rate).

13. Unfunded Actuarial Accrued Liability - that portion of the actuarial accrued liability (including the present value of benefits presently being paid to retired members and the value of any miscellaneous liabilities) that exceeds the value of current assets.

14. Funded Ratio - the funded ratio is the ratio of the actuarial value of assets to the actuarial accrued liability. The funding ratio is a measure of funded status. While the annual ratio is important as a measure of the System's current funded status, it is probably more valuable to review ratios in time series as a measure of the direction of funding. Consistent substantial increases in this ratio over time can be an indicator of funding progress. However, benefit changes, changes in actuarial assumptions and other external forces may cause the ratio to decrease.

ARKANSAS STATE HIGHWAY EMPLOYEES' RETIREMENT SYSTEM
INVESTMENT POLICY

I. INVESTMENT OBJECTIVES

The investment objectives shall be: (1) the protection of the ASHERS' Fund so that such assets are preserved for providing benefits to participants and their beneficiaries; and (2) to maximize total return - either in the form of income or capital appreciation or both - consistent with prudent risk taking on the amounts available to provide such benefits. An overall investment objective will be to achieve a total fund return of at least the actuarial rate of 8%. The investments of the ASHERS' Fund shall be so diversified as to minimize the risk of large losses, unless under particular circumstances it is clearly prudent not to do so.

II. PORTFOLIO GUIDELINES

Through selecting, timing and weighting investment, the Fund's objective is to maximize the total return of the account assets, through price appreciation and/or yield, consistent with the level of risk taken. In determining the appropriate risk posture for the Fund, consideration should be given to the overall risk characteristics of the Fund, and the extent to which components of the Fund are diversified. Additionally, the Board of Trustees established the following specific guidelines.

A. Upon recommendation of investment counsel, covered call options may be written on eligible securities.

B. The System may establish a Securities Lending Program subject to restrictions established by the Board, and consistent with Title 24 of the Arkansas Code [24-3-412].

C. ASHERS shall not invest in private placements except in Arkansas-related investments.

D. Investment managers will be measured by appropriate benchmarks.

III. TYPES OF INVESTMENTS

In fulfilling the investment objectives stated above, the Board of Trustees may invest the funds of ASHERS in the following types of investments.

A. Equities

No more than five (5) percent of the ASHERS' total assets at market value may be invested in the equities of any one company or affiliated group of companies.

B. Fixed Income

1. No more than three (3) percent of the ASHERS' total assets at market value may be invested in any one debt issue.

2. No more than five (5) percent of the ASHERS' total assets at market value may be invested in the debt securities of any one issuer.

3. None of the above limitations on issues and issuers shall apply to United States Treasury or government guaranteed or agency debt securities.

4. Debt securities purchased shall generally carry an investment rating of BAA or better by Moody's or a rating of BBB or better by Standard & Poor's.

C. Cash Equivalents

Short-term funds may be invested in direct U. S. Government Obligations such as U. S. Treasury Bills, repurchase agreements which are fully collateralized by U. S. Treasury Issues or Commercial paper with a rating of A 1+P1. Cash equivalents also include highly liquid investments utilized in the cash sweep account with the master trustee (custodian).

D. Stock Index Derivatives

The Board gives investment managers the authority to utilize "Stock Index Derivatives" for the purpose of hedging risk and adjusting asset allocation. Stock Index Derivatives include stock index options and stock index futures on broad based indices such as the S&P and NASDAQ indices as well as exchange traded funds (“ETFs"). ETFs include those that invest in U.S. equities as well as those that invest in international equities.

The Board authorizes the use of Stock Index Derivatives and exchange traded funds that trade on U.S. exchanges.

E. Options

The Board gives investment managers the authority to utilize put and call options on individual stocks as well as on stock and bond indices. Options may be used for the purpose of hedging risk and adjusting asset allocation. Options may also be used as a tool to acquire a stock index or an individual stock at a lower price, (i.e. selling ‘uncovered’ puts), or as a tool to sell a stock index or individual stock at a higher price (i.e. selling ‘covered’ calls).

F. Master Limited Partnerships

The Board gives investment managers the authority to invest up to $100 million in Master Limited Partnerships (MLP’s). MLP’s are companies that are structured as a limited partnership rather than a C Corporation. Limited partnership units are traded on public exchanges just like shares of corporate stock.

The motion by the Board at the meeting held January 13, 2011, was based on the presentation by CastleArk Management. The following investments are included in this classification: Master Limited Partnerships, Royalty Trusts, REIT's and Exchange Traded Funds of trusts.

G. Other Investments

The Board gives investment managers the authority to utilize the following types of "Other Investments" for the purposes of taking advantage of a greater range of investment opportunities and for managing risks associated with more traditional equity and fixed income investments. These shall be used at the discretion of the investment manager when they believe it is in the best interest of the System.

Authorized "Other Investments":

Fixed income funds. These include fixed income exchange–traded funds, including ultra-short funds, and international fixed income funds.

Commodities funds. These include exchange–traded funds and ultra-short funds that invest directly or indirectly in precious metals, energy or other commodities.

Securities and funds including ETFs that use margin debt and/or sell securities short, such as ultra-short funds.

G. Investments not described above

1. Any type of investments other than equity or fixed income designated above shall be made only after specific guidelines are established by the Board of Trustees.

2. Other investments shall only be entered into upon full analysis by qualified, objective management organization, as consistent with fiduciary responsibilities. Investment management organization services may be secured on a fee per-project basis.

IV. ASSET ALLOCATION

To avoid extreme exposure to investment risk, the following percentages represents the maximum portion at cost of the portfolio that may be invested.

Asset	
Equities	75% (with a 5% tolerance)
Fixed Income	75% (with a 5% tolerance)

V. PROXY VOTING

The Board has authorized investment managers to vote proxies in the best interest of the ASHERS Fund. Investment managers are required to provide a written report of its proxy voting upon request.

VI. STATUTORY AUTHORITY

The primary statutory authority for the investment activities of ASHERS is found in Title 24 of the Arkansas Code [Sections 24-3-401 through 24-3-416 of the Arkansas Code], as amended.

ASHERS' Funds shall be invested under the prudent investor rule, as interpreted and defined by the Federal Employee Retirement Income Security Act (ERISA) of 1974, as amended, and regulations promulgated pursuant thereto. The prudent investor rule shall be applied by each party serving in a fiduciary capacity for ASHERS. The prudent investor rule means that in making investments, the fiduciaries shall exercise the judgment and care, under the circumstances then prevailing, which an institutional investor of ordinary prudence, discretion, and intelligence exercises in the management of large investments entrusted to it, not in regard to speculation but in regard to the permanent disposition of funds, considering probable safety of capital as well as probable income.

Voted May 9, 2013 Board meeting, effective date May 9, 2013

YOUR GUIDE TO

AR DOT
ARKANSAS DEPARTMENT
OF TRANSPORTATION

This booklet provides information about your Arkansas State Highway Employees' Retirement System (the System). It offers a non-technical view of the provisions of the retirement laws that pertain to you as an Arkansas Department of Transportation employee and a member of the Arkansas State Highway Employees' Retirement System.

These benefits are in addition to any you may be entitled to receive from Social Security.

It is the desire of the Board of Trustees that each member of the System have a complete understanding of their benefits. If the information contained in this booklet fails to answer any questions you may have regarding your retirement, you should contact the Retirement Office at:

Arkansas State Highway
Employees' Retirement System
P.O. Box 2261
Little Rock, Arkansas 72203-2261
501-569-2411

The Retirement Office is in the Arkansas Department of Transportation Central Office, Room 405, located at 10324 Interstate 30 in Little Rock. If you feel your needs would be better served in person, please call for an appointment and visit the Retirement Office.

ARKANSAS STATE HIGHWAY EMPLOYEES' RETIREMENT SYSTEM

FOURTEENTH EDITION • 2018

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HISTORY

Act 454 of 1949, as amended, established the Arkansas State Highway Employees' Retirement System.

A seven person Board of Trustees and an Executive Secretary administer its operation. Four of the Trustees, the Director of the Arkansas Department of Transportation, the Deputy Director & Chief Engineer of the Arkansas Department of Transportation, the Treasurer of the State of Arkansas, and the Director of the Arkansas State Finance and Administration Department, are statutory members. Two board members are elected by the active members of the System; and the retired member is elected by retirees and active DROP (Deferred Retirement Option Plan) participants. An election is held each June to replace the Board member(s) whose two-year term is expiring.

The Board of Trustees will select an Executive Secretary. This position does not vote on Board decisions.

A committee of the Board of Trustees is responsible for investing the funds of the System in securities authorized as Retirement System Investments by the laws of the State of Arkansas. Investment counselors are employed by the Board of Trustees to invest the funds on a discretionary basis as defined in the investment policies adopted by the Board.

ARKANSAS STATE HIGHWAY EMPLOYEES' RETIREMENT SYSTEM BOARD OF TRUSTEES

MEMBERSHIP

Every active employee of the Arkansas Department of Transportation, who is not a member of the DROP, is a member of the System. Membership is excluded for persons who are employees of the Arkansas Department of Transportation on or after July 1, 1997, and who are receiving benefits from a reciprocal retirement system.

Membership in the System may be terminated by retirement, disability, death or withdrawal, whether voluntarily or involuntarily, from active service with the Arkansas Department of Transportation.

CONTRIBUTIONS

All members contribute six percent (6%) of their total earnings to the System and the Arkansas Department of Transportation, as employer, contributes 12.9% of the total payroll.

The Department's contribution is determined by actuarial data formulated to assure the System has adequate resources for payments and operating expenses, and has no relation to the 6% paid by the employees. **The members do not have any legal claim on contributions made by the Department to theSystem**.

REFUNDED SERVICE

In order to purchase refunded service time, those employed with the Arkansas Department of Transportation or a reciprocal system must contact the Retirement Office. Once approved, the employee must make a lump sum payment based on an actuarial equivalent as prescribed by the Board. This payment may be made by using post tax dollars or funds transferred by a direct rollover from a 401k, traditional IRA, or a 457 deferred compensation plan.

"Actuarial Equivalent" means the amount the member will pay is the same as the actuarial cost of the benefit. The calculator used by the System is furnished by the actuary.

RECIPROCAL SYSTEM

A "Reciprocal System" is a retirement system that allows covered employees to establish "reciprocal" service credit. Those systems that allow members to establish "reciprocal" service credit are the Arkansas State Highway Employees' Retirement System, the Arkansas Teacher Retirement System, the Arkansas Public Employees' Retirement System, the Arkansas State Police Retirement System, the Arkansas Judicial Retirement System, the Arkansas Local Police and Fire Retirement System (excluding time as a volunteer with a police or fire department), Alternate retirement plans for a college, university, or the Department of Higher Education provided under Arkansas Code Annotated 24-7-801, and a vocational-technical school or the Department of Career Education provided for under Arkansas Code Annotated 24-7-901.

A current state employee who is a former member of one of these systems, and who is not receiving a retirement benefit, and is not in the DROP may re-establish the service credits in the respective system to which the member formerly belonged. Employees establishing reciprocal service must make the appropriate contributions with the previous retirement system(s). The service is then combined to determine eligibility for retirement based on length of service only. If total credited service in all systems equals the minimum required, each system will compute the benefits applicable to the time of service the employee has with the respective agency.

A member may be considered a deferred member of a reciprocal plan if they have not withdrawn their contributions or were a member of a non-contributory plan.

MILITARY SERVICE

Limited credit, not to exceed five (5) years, for Military Prior service may be purchased in the Arkansas State Highway Employees' Retirement System if the following requirements are met.

- **a.** The member has five (5) years of creditable service with the Arkansas State Highway Employees' Retirement System;
- **b.** The member received an honorable discharge from the Armed Forces.

Limited credit, not to exceed three (3) years, for Military Leave Without Pay service may be purchased in the Arkansas State Highway Employees' Retirement System if the following requirements are met.

- **a.** The member has ten (10) years of creditable service with the Arkansas State Highway Employees' Retirement System;
- **b.** The member received an honorable discharge from the Armed Forces;
- **c.** The member is not receiving federal military service retirement pay, excluding federal military disability retirement pay.

The amount of military time a member may purchase is limited to the time spent on active duty or five (5) years, whichever is less. No member is eligible to purchase creditable military service in more than one State of Arkansas supported retirement system.

There are two conditions under which the member may purchase credit for military service.

1. **Military Prior:** A member of the Arkansas State Highway Employees' Retirement System who was discharged from active service in the Armed Forces of the United States prior to being employed by a State of Arkansas supported retirement system is entitled to purchase military time as creditable service in the System. The calculation to determine the amount to be paid by the member can be found in Arkansas Code Annotated 24-2-502.

2. **Military Leave Without Pay:** A member of the Arkansas State Highway Employees' Retirement System, who entered active service in the Armed Forces of the United States after having previously been employed by a position covered by a State of Arkansas supported retirement system, is entitled to purchase military time as creditable service in the System. For this benefit the member must pay an actuarial equivalent as prescribed by the Board.

A member must submit a *Federal Form DD-214* in order to have the cost of service calculated.

QUALIFICATIONS FOR RETIREMENT

A member of the Arkansas State Highway Employees' Retirement System must meet the following age and service requirements before he or she is eligible for retirement benefits.

AGE	CREDITABLE SERVICE TIME
65	**5 Years**
62	**15 Years**
60	**20 Years**
55 with reduction	**5 Years**
Any	**28 Years***
Any	**5 Years if Disabled and Disability is permanent or of long duration**

When the minimum of five (5) years of creditable service is obtained, the member's retirement benefits are vested, and the member may retire upon meeting the age requirement regardless of where employed. The only requirement is that the member must have left their contributions with the Arkansas State Highway Employees' Retirement System, if no longer employed with the Department.

*To join the DROP, these employees must have 30 years of service.

APPLYING FOR RETIREMENT

Prior to the date the employee anticipates retiring, they must submit a Request for Retirement or Deferred Retirement Option Plan (DROP) application. The effective retirement date shall not be retroactive to a date prior to the application. Entry into DROP will be at the beginning of a pay-period.

In order to begin receiving retirement benefits or enter the DROP, the employee should notify their supervisor of their intention to retire as well as their effective retirement or DROP date. The employee must then complete both pages of a *Request for Retirement (Forms 19-300, 19-310, and 19-312)*, and select an annuity option: Straight Life, Option A, or Option B. Completed forms should be forwarded to the Retirement Office through the Division/District payroll personnel. If a beneficiary of a deceased employee is eligible to receive benefits, they must notify the Retirement Office to apply for an annuity.

APPLYING FOR DISABILITY RETIREMENT

When applying for disability retirement, a *Request for Disability Retirement (Form 19-311)* must be completed. Upon receipt of the completed form, the Retirement Office will forward medical forms to the applicant's physician(s) for completion. When the physician(s) has returned the completed medical forms to the Retirement Office, the forms are submitted to the System's Medical Board. The Medical Board consists of physicians who evaluate the applicant's condition to determine if their physical condition makes them eligible for disability retirement. To qualify for disability, the physical problems of the applicant must prevent them from performing their assigned duties and must be permanent or of long duration. The Medical Board meets quarterly.

No member will be eligible to receive disability benefits for a disability incurred prior to becoming a member of the System.

If a disability retirant secures employment with a non-public employer, the retirant shall be allowed to earn compensation from the employment for nine (9) months, during which period of time the retirant shall receive **no monthly benefits** from the System. If, at the end of the nine-month trial period, the retirant wishes to continue their employment outside the System, then the disability retirement status shall terminate.

A disability retirant may earn an amount less than what is considered by the Social Security Administration as the maximum amount that a person under sixty-five (65) years of age may earn; without losing disability benefits.

A member who is retired because of disability shall be required to submit proof of income on a periodic basis. If the disability retirant refuses to submit the requested paper work, their annuity will cease until the documents are received.

A member who is retired because of disability shall be required to undergo periodic medical examinations at the discretion of the Board. If and when a medical examination shows that the disability has been removed, disability retirement benefits shall cease.

The System will reimburse the member up to $25.00 for copies of medical records.

RETIREMENT BENEFITS

Retirement benefits are determined using the following formula:

Number of years of creditable service (*times*) two and two-tenths percent (2.2%) (*times*) the average of the three (3) highest consecutive year's earnings.

This annual annuity is then divided by twelve (12) to determine the monthly benefits.

Once the amount of benefits has been determined, the amounts to be paid to the retirees or beneficiaries are subject to the conditions defined by the Straight Life Annuity, Option A, or Option B. A maximum of $125.00 is then added to the monthly benefit for each retiree as a health care offset. The exact amount of the offset is found in Arkansas Code Annotated 24-5-125(c).

COLA

An annual Cost of Living Adjustment (COLA) is added on July 1 of each year for those individuals who have been retired or a DROP participant at least one year. The increase is a calculated percentage change of the benefits received as of June 30 each year. To calculate the annual COLA, the Consumer Price Index for Urban Wage Earners & Clerical Workers for the 1-year period ending December of the previous calendar year is used. The COLA is capped at 3%.

EARLY RETIREMENT WITH REDUCED ANNUITY

A member may take an early retirement with reduced annuity, if they are at least 55 years old and have at least five (5) years creditable service. However, the amount of the annuity (after considering the effects of the option selected, Straight Life, A, or B) is reduced by 8/10 of 1% (.008) for each of the first 60 months or fraction thereof, and 3/10 of 1% (.003) for the next 60 months or fraction thereof that the early retirement date precedes the date the member could have retired without a reduction (see *Qualifications for Retirement*). Early retirement does not reduce the health care offset benefit.

OPTIONS AVAILABLE

Options available to retiring members include the **Straight Life Annuity, Option A, or Option B**.

Estimates of the annuities may be calculated using the Department's intranet through the Retirement Section link.

The **STRAIGHT LIFE ANNUITY** pays the monthly amount determined using the formula in the ***Retirement Benefits*** section of this booklet for the life of the retiree. Upon the death of the retiree, the named beneficiary receives a pro-rated amount for the portion of the last month that the retiree lived. The beneficiary will also receive the amount in the retiree's contribution account on the date of retirement, less total annuities paid from the date of retirement until the retiree's death. If the total annuities paid have equaled or exceeded the retiree's contributions, there will be a zero balance and nothing will be paid to the beneficiary.

OPTION A pays a percentage of the **Straight Life Annuity** to the retiree for life. The amount is calculated using the member's age at retirement. If the retiree dies within 120 months of terminating employment, the beneficiary will receive payments for the remainder of the 120 months (120 months less the number of monthly payments made to the retiree). At the end of the 120 months, all payments will stop.

If the retiree lives to receive 120 or more monthly payments, only the portion of the last month the retiree lived will be paid to their beneficiary. No additional payments will be made.

OPTION B pays a percentage of the **Straight Life Annuity.** The annuity payable to the retirant and the surviving beneficiary shall be reduced by an amount calculated to provide an actuarially equivalent benefit to the Straight Life Annuity.

Option B is available only if the beneficiary falls into one of the following two categories:

1. A spouse who is married to the retiree for at least two (2) years immediately preceding the due date of the first annuity payment or payment in the DROP.

2. A person forty (40) years of age or older on the first payment due date who has received more than one-half of their support from the retiree for at least two (2) years immediately preceding the first payment due date of the retiree's annuity.

To take advantage of this adjustment, the taxpayer and/or individual must meet the following conditions and standards:

A. The individual with disabilities is a natural or adopted child, or a dependent of the taxpayer.

B. The taxpayer maintained, supported, and cared for the individual with total and permanent disabilities in the taxpayer's home.

C. An individual with total and permanent disabilities includes any person who was unable to engage in any substantial gainful activity by reason of any medically determinable physical or mental impairment which can be expected to result in death or has lasted or can be expected to last for a continuous period of not less than twelve (12) months.

D. A physical or mental impairment is an impairment which results in anatomical, physiological, or psychological abnormalities which are demonstrable by medically acceptable clinical or laboratory diagnostic techniques.

E. The above individual has been diagnosed by a physician as having total and permanent disabilities as outlined in conditions of C and D above.

F. The member must produce a confirmation that the appropriate *Individual Arkansas Tax form (AR1000DC)* was filed two (2) years immediately preceding the first payment due date of the retiree's annuity or DROP payment.

Under **Option B**, upon the death of the retiree, the retiree's beneficiary receives one-half of the retiree's annuities for the remainder of the beneficiary's life. If the beneficiary dies prior to the retiree, payments stop upon the death of the retiree.

After the first annuity or DROP deposit is paid, a change from one option to another is not permitted. However, the retiree may change to a **Straight Life Annuity** when the beneficiary under Option B dies or the marriage is dissolved by divorce. In this case, the member (retiree) must submit the required supporting documents such as a death certificate or divorce decree and request that the Retirement Office change their plan from Option B to Straight Life Annuity.

DEATH IN-SERVICE BENEFITS

A benefit for Death In-Service is due a spouse or other named beneficiary(ies) provided the member has five (5) or more years of credited service.

Spouse:

- Will be able to begin receiving full monthly benefits upon the death of the member by selecting Option A if the member did not meet the age and service requirement. (Arkansas Code Annotated 24-5-118(B)(d))

- May wait until the member would have been the appropriate age, with the amount of credited service at the time of death. In this case the Spouse may choose Option A or B to receive full benefits.

Other Named Beneficiary(ies):

- Will be able to begin receiving a reduced monthly benefit or wait until the member would have reached retirement age to start receiving full benefits by selecting Option A.

- May take a lump sum payment of the contributions and interest accrued to the member at the date of their death.

To determine when the deceased person would meet full retirement; the service time at the date of death is compared to the age requirements listed in the ***Qualifications for Retirement*** section of this booklet.

If a member with less than five (5) years of creditable service dies, their beneficiary receives the balance in the member's contribution account. Interest is paid on the contribution account, if the member has contributed to the System for at least one (1) year.

Upon receiving notification of the death of a member or a retiree, the Retirement Office will contact the beneficiary for completion of the necessary papers to begin payment of benefits.

Act 1089 of 1997 provides a $15,000 death in-service benefit for all active members.

Act 482 of 2001 provides a $7,500 death benefit for retired members.

TAXES

All benefits paid or withdrawals of contributions are subject to State and Federal income tax. It is the responsibility of the person(s) receiving the payments to make sure that the amount of taxes being withheld is sufficient.

REFUND

When a member terminates employment with the Arkansas Department of Transportation and wants their contributions to the System refunded, they are required to complete a ***Request for Refund of Accumulated Contributions (Form 19-309)***. Contributions will not be refunded unless a completed Form 19-309 is forwarded to the Retirement Office.

Contributions of less than $250.00 are forfeited by any former member who does not request withdrawal of the contributions within three (3) years after leaving employment with the Arkansas Department of Transportation.

BENEFICIARIES

It is very important for members to keep the Retirement Office informed of any changes in their beneficiary(ies). The beneficiary may change for a number of reasons, but the death of a beneficiary or a change in marital status require that an update to the System records be made.

A completed ***Change of Beneficiary (Form 19-307)*** must be forwarded to the Retirement Office to make any beneficiary changes. After retiring or terminating employment with the Arkansas Department of Transportation, the member should keep their beneficiary(ies) current if their contributions remain on deposit with the System.

The only way for a member to ensure their contributions are distributed as desired is to keep the Retirement Office informed of changes.

FORMS

All forms needed to apply for retirement or make the necessary changes are available in the payroll office of the District/Division Office, and on the Department's intranet (Forms Selection: Retirement).

ANNUAL STATEMENT

Annual statements are mailed to every person who is a member of the System. The statement shows the amount of their contributions and the accumulated interest as of June 30. Although interest is recorded on every account, it is payable only upon withdrawal of funds and is only paid to those who have been contributing members for at least one (1) year.

"DROP"
DEFERRED RETIREMENT OPTION PLAN

A two-tiered Deferred Retirement Option Plan (DROP) is available to members of the System. To be eligible to participate in the DROP, an employee must meet the age and service requirements (*Qualifications for Retirement*).

- **Tier 1 (Initial 5 year period):**
  The employee's retirement benefits are calculated and 90% of this amount is deposited in the member's DROP account. The employee does not pay the 6% contributory amount, and the Department does not pay the 12.9% match.

- **Tier 2 (End of Tier 1 through age 65):**
  An employee may continue working after completing the initial 5 year period, as long as that individual is less than 65 years of age. The employee will resume paying the 6% contributory amount and the Department will match with 6.9%. The amount of money deposited into the employee's DROP account will be reduced to 79%. There is no recalculation of retirement benefits under this plan.

  Under Tier 2, the employee must cease employment the day before their 65th birthday.

QUALIFIED DOMESTIC RELATIONS ORDER

The Arkansas State Highway Employees' Retirement System, by law, has submitted a recommended Qualified Domestic Relations Order to the Legislative Council for their approval. This recommended form is available for retirees, spouses, and attorneys.

ARKANSAS DEPARTMENT OF TRANSPORTATION

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