

Ohio Retirement Study Council

Request For Proposals (RFP) for the Actuarial Audit of the
School Employees Retirement System of Ohio

Due Date: Friday, June 7, 2024

No Later Than 5:00 P.M. Eastern Standard Time (EST)





June 7, 2024

Ms. Bethany Rhodes
Director/General Counsel
Ohio Retirement Study Council
The School Employees Retirement System of Ohio
30 East Broad Street, 2nd Floor
Columbus, Ohio 43215

Subject: Request for Proposal for Actuarial Audit

Dear Ms. Rhodes:

Gabriel, Roeder, Smith & Company (“GRS”) is pleased to have this opportunity to submit our Proposal to provide professional Actuarial Audit Services to the Ohio Retirement Study Council (“ORSC”) regarding the School Employees Retirement System of Ohio (“SERS”). The attached Proposal sets forth our understanding of the work to be performed, and the qualifications and capabilities of the consultants and resources of GRS, and specifically addresses the requirements set forth in your Request for Proposal (“RFP”) dated April 11, 2024.

GRS is the prominent provider of actuarial and consulting services to the public sector community in the country. As the Public Sector Leader, we serve more than 1,000 public sector retirement systems and healthcare programs in 42 states, including 40 statewide public pension retirement systems, 12 of which have 250,000 or more members. The location of our clients ranges from Rhode Island to Hawaii and from Minnesota to Texas.

Actuaries performing audits can sometimes get lost in the details by focusing on the subtle differences of valuation systems or how an immaterial provision could be valued “a little bit better”. These are not matters that should concern the Council. To that end, our audit will consider the context of how the assumptions and methods impact the ongoing communications with the Retirement Board, stakeholders, and Staff on matters that are truly relevant regarding SERS and its sustainability. The final audit report will answer a handful of questions:

- 1) are the funding results, in particular the assessment of the contribution requirements, reasonable?
- 2) does there appear to be any bias in the current actuarial model?
- 3) do the reports meet actuarial standards of practice?
- 4) are there potential, or even predictable, risks on the horizon that need to be discussed and perhaps addressed?

Ms. Bethany Rhodes

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The proposed GRS team is the best match for providing this high level of perspective to the ORSC because of our relevant experience with similar situations across the country. Often times, bidders will lean on company-wide experience, but this proposed team has significant *direct* experience with statewide retirement systems, both on an audit and an ongoing consulting basis. While GRS as a company works with more than 30 similar statewide retirement systems (which represents approximately one third of statewide retirement systems in the country), the proposed team, on its own, works directly with 13 statewide retirement systems that are spread out all across the country. This team has also audited several statewide retirement systems and large municipalities in the last five years. If you research our references, you will find *recent* reports with *our* signatures, not those of our colleagues and not those from over a decade ago. We will be able to provide specific, applicable, first hand insight into how the current SERS actuarial model compares with current industry best practices and comparisons to how other Systems have handled similar situations.

The primary point of contact for the proposed actuarial audit team is Dana Woolfrey, who is located in our Denver, CO Office and also meets all of the professional requirements to be a proposed Lead Actuary for this engagement. Dana's contact information is as follows:

Dana Woolfrey, FSA, EA, FCA, MAAA
Senior Consultant
Gabriel, Roeder, Smith & Company
7900 East Union Avenue, Suite 650
Denver, CO 80237-2746

720-274-7272 (office direct line)
773-733-1018 (mobile)
dana.woolfrey@grsconsulting.com

We have a full understanding of the services to be performed under this engagement as detailed in the RFP. Specifically, we acknowledge the Scope of Audit outlined in Section II of the solicitation. Our proposal sets forth our understanding of the work to be performed and the overall qualifications and capabilities of the GRS actuarial and consulting team.

Authorization to Sign

Dana is authorized to represent GRS in all matters related to this engagement with the exception of contract negotiations. .

Danny White is authorized to represent GRS in this proposal bidding process and to enter into a contract on behalf of GRS. Danny's contact information is listed below:

Daniel J. White, FSA, EA, MAAA
Vice President
Gabriel, Roeder, Smith & Company
5605 N. MacArthur Blvd., Suite 870
Irving, Texas 75038

Phone: 469-524-1801 (direct)
214-288-4235 (mobile)
E-mail: danny.white@grsconsulting.com


Ms. Bethany Rhodes

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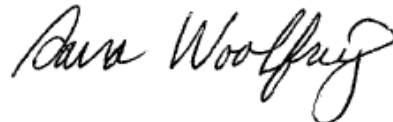
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We would like to, again, thank you for the invitation to bid on providing actuarial audit services to the Ohio Retirement Study Council and look forward to creating a partnership that will be mutually beneficial and satisfying. We know you will be pleased with our responsiveness and the quality of our work.

Respectfully submitted,
Gabriel, Roeder, Smith & Company



Daniel J. White, FSA, EA, MAAA
Vice President



Dana Woolfrey, FSA, EA, FCA, MAAA
Senior Consultant

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SECTION 1

PROPOSAL SUMMARY

Proposal Summary

Each proposal shall provide a narrative summary of the proposal being submitted. This summary should identify all of the services and work products that are being offered in the proposal and should demonstrate the firm's understanding of the project. In addition to the summary, please provide all of the following general information:

GRS Response

The selection of Gabriel, Roeder, Smith & Company (“GRS”) to serve as auditing actuary to the Ohio Retirement Study Council will provide you with maximum value and benefit. We affirm that we fully understand the scope of the bid and are experienced in providing these services.

The proposed team is fully qualified to provide a full replication audit of the Annual Basic Benefits Valuation as well as the Retiree Healthcare Valuation of the School Employees Retirement System, and to review the associated accounting disclosures.

The proposed team is fully qualified to review the five-year experience study and opine on the reasonableness of the assumptions.

The proposed team will provide a written report. We have included the final deliverable associated with each of our audit references for your reference.

We have confidence in our ability to provide these services because the proposed team *has* provided these services, recently and to large statewide systems in the roles proposed for this project. The proposed lead, Dana Woolfrey, FSA, has led six audits in the past five years, four of them for statewide systems. Across the team, we provide regular retainer actuarial valuation services to 13 statewide clients, more than some of our competitors can tout firm-wide. This provides you with significant perspective in the assessment of your assumptions and policies.

We understand that there are many stakeholders involved within and around SERS. You can be confident that our work will include clear explanations and disclosures, in layperson terms and that any findings will clearly identify to whom they are directed.

The rest of this proposal outlines our proposed process, timeline, and fees for completing the actuarial audit of SERS. We believe that that our proposed work plan will demonstrate to you that GRS will be the provider of choice for this project.

- The firm's primary contact for ORSC staff use and, if different, for SERS staff use during the audit, including the contact's address, telephone and e-mail address;

GRS Response

The primary contact for ORSC or SERS staff use will be Dana Woolfrey, FSA. As will be demonstrated throughout the bid, Ms. Woolfrey has significant experience working with statewide plans on both a retainer and audit basis.



Dana Woolfrey, FSA, EA, FCA, MAAA
 Senior Consultant
 Gabriel, Roeder, Smith & Company
 7900 East Union Avenue, Suite 650
 Denver, CO 80237-2746

720-274-7272 (office direct line)
 773-733-1018 (mobile)
dana.woolfrey@grsconsulting.com

- General ownership structure of the organization, including subsidiary and affiliated companies, and joint venture relationships;

GRS Response

Gabriel, Roeder, Smith & Company (GRS) was incorporated on October 2, 1962 from a merger of A. G. Gabriel & Company, a sole proprietorship that was established in 1938, and another younger sole proprietorship, Roeder & Company. In 1995, the company merged with Kruse, O'Connor & Ling, a Florida based consulting firm.

In 2015, the company formed a health & welfare consulting subsidiary, Gabriel, Roeder, Smith & Company Health and Welfare Consulting, LLC from its existing health and welfare practice. For administrative and operating efficiency, both Gabriel, Roeder, Smith & Company and Gabriel, Roeder, Smith & Company Health and Welfare Consulting, LLC operate independently as wholly owned subsidiaries of Gabriel, Roeder, Smith & Company Holdings, Inc., a private Michigan corporation. "GRS" is the national brand under which Gabriel, Roeder, Smith & Company Holdings, Inc. operates and its subsidiaries provide professional services.

Below is a chart providing a summary of the consulting services we are able to provide clients.

Gabriel, Roeder, Smith & Company Actuarial & Benefits Consulting Services

Pension & OPEB Plans	
<u>Actuarial Services</u> Valuations Audits <u>Risk Management</u> Funding Policy Experience Studies Asset/Liability Studies <u>Legislative & Regulatory</u> Cost Impact Studies GASB Standards Consulting Research & Surveys	<u>Best Practice Benefit Design</u> Defined Benefit DB/DC Hybrid Cash Balance Adjustable Pension Plan Benefit Adequacy Studies Benefit Policy Development <u>Client Software</u> MagVal™ Suite: Projection Software GRS Advantage™: Client Services Website Exclusion Ratio Calculator 415 Screening Tool
DB Plan Administration	
<u>Core Services</u> Benefit Calculations Data Housing Call Center Communications	<u>Client Software</u> Plan Sponsor Portal Participant Benefit Estimator



We are the prominent provider of actuarial and consulting services to the public sector community in the country. As the Public Sector Leader, we serve more than 1,000 public sector retirement systems and healthcare programs in 42 states, including over 40 statewide public pension retirement systems, 12 of which have 250,000 or more members. The location of our retained clients ranges from Hawaii to Rhode Island and from Minnesota to Texas. Appendix C contains a list of GRS' statewide clients.

Ownership of GRS

GRS is a private corporation owned by its employees. All full-time employees are eligible and encouraged to purchase GRS stock. Because GRS is 100% employee-owned, we can provide clients with truly independent consulting advice.

There are two corporate officers: A President and a Chief Operations and Financial Officer (COFO, who also serves as Secretary and Treasurer). The President is responsible for management of the firm with focus on internal operations. The President reports to the Board. The COFO is responsible for the management and leadership of all of the GRS internal operational, administrative and financial functions. The COFO reports to the President.

The Corporate Officers are as follows:

- Judith A. Kermans, FCA, EA, MAAA, President/CEO
- Theora P. Braccialarghe, FSA, EA, FCA, MAAA, Executive Vice President

Together, these officers interact with an Executive Committee (EC) that consists of the two corporate officers listed above and the following vice presidents:

- Theora Braccialarghe, FSA, MAAA, EA, FCA, Vice President
 - Mark Buis, FSA, MAAA, EA, FCA, Vice President
 - Danny White, FSA, MAAA, EA, Vice President
-
- Information regarding any material change in the firm's structure or ownership within the last eighteen months, or any material change in ownership, staff, or structure currently under review or being contemplated by the firm;

GRS Response

There have been no significant shifts in the GRS organization within the last eighteen months and none are being contemplated at this time.

- If available, a third-party assessment or report concerning client satisfaction and measures of the firm's strengths and weaknesses;



GRS Response

GRS does not engage a third-party for purposes of determining client satisfaction. GRS engages a third-party to perform a SOC 2 Type II Report regarding our processes. The most recent report found zero deficiencies. GRS does not otherwise engage a third-party to assess the firm's strengths and weaknesses.

GRS does perform internal client satisfaction surveys annually. In addition to this survey, our management team conducts in-person or virtual meetings with clients to further assess service needs and expectations.

Colorado Fire and Police Pension Association, one of our statewide retainer clients for which Ms. Woolfrey is a lead consultant, provides us with the results of their annual internal survey regarding our services. The most recent survey results are included in Appendix D.

- Any material litigation which has been threatened against the firm or to which the firm is currently a party;

GRS Response

None

- A list and brief description of litigation brought against the firm by existing or former clients over the last five years; and

GRS Response

None

- A list of any professional relationships involving the ORSC, the five Ohio public retirement systems, the State of Ohio, or its political subdivisions for the past five years, together with a statement explaining why such relationships do not constitute a conflict of interest relative to performing the proposed review. In the event that the firm has had any professional relationships involving the ORSC, the five Ohio public retirement systems, the State of Ohio, or its political subdivisions for the past five years, the firm shall provide a statement explaining why such relationships do not constitute a conflict of interest relative to performing the proposed review, or, if necessary, an explanation of the actions that will be taken to ensure an independent review.

GRS Response

GRS is the consulting actuary for the Ohio Public Employees Retirement System. These services are provided by our associates in the Southfield, MI office. The proposed associate team to perform this audit of SERS has no involvement in providing those services to OPERS.

GRS consultants operate under the American Academy of Actuaries' Code of Conduct, which requires us to disclose any conflicts of interest (potential or perceived) when giving consultant advice. GRS believes in this situation, there is no conflict of interest and believes that the proposed team can provide a thorough, complete, and independent actuarial audit.



SECTION 2

CAPABILITIES AND EXPERIENCE

Capabilities and Experience

Each proposal shall describe the firm's capabilities and recent experience (at least during the last five years) in performing actuarial valuations, audits, or studies of public employee retirement systems. The response should include information on the types and sizes of public employee retirement systems for which past work has been performed, including whether the systems were defined benefit or defined contribution plans, the types and number of participating employers, number of participants, and other relevant indicators of plan type, size, and comparability to SERS. You should include other information you believe may be relevant in demonstrating your capabilities in performing the actuarial audit, including other professional experience and data processing capabilities.

GRS Response

We have provided lists of GRS' retained Statewide clients and recent audits in Appendices B and C. These lists are extensive. However, we feel that the proposed *team's* capabilities and recent experience, rather than the *firm's* capabilities and recent experience in performing actuarial valuations and audits is more relevant to the ORSC. The proposed team's experience in regards to actuarial valuations and audits can stand on its own merits without need to reference our colleagues' work.

In the last five year's Ms. Woolfrey has led six actuarial audits of large public employee retirement systems, four of statewide systems. All are listed below. Members of the proposed team provide retainer services (including annual valuation services and consulting) to 13 statewide clients listed on the following page. In the last five years, members of the proposed team have transitioned five new statewide retainer clients which involves a full replication valuation with a quick turnaround, similar to an audit.

In addition to our extensive experience working with the retirement systems and boards on valuations and audits, your proposed leads have proven experience working effectively with legislated oversight bodies. The audit of the Colorado Public Employees Retirement Association completed in 2021 by Ms. Woolfrey was performed for the Colorado Legislative Council and the retainer work for the Kentucky Public Pensions Authority involves regular communication between Ms. Shaw and the Kentucky Public Pension Oversight Board.

The following is a list of the six audits of state and municipal systems performed by Ms. Woolfrey with assistance from proposed team members in the last five years. As mentioned, a firm-wide list of audits is included in Appendix B.

City and County of San Francisco Employees' Retirement System (August 2023)

Assets: \$34 billion

Actives: 34,000

Total Count: 79,000

Work Performed: Sample life audit of the July 1, 2022 actuarial valuation.



North Dakota Teachers Fund for Retirement (Completed January 2023)

Assets: \$3 billion

Actives: 12,000

Total Count: 25,000

Work Performed: Full replication audit of the July 1, 2022 actuarial valuation.

Oklahoma Public Employees Retirement System (Completed August 2022)

Assets: \$11 billion

Actives: 29,000

Total Count: 72,000

Work Performed: Full replication audit of the July 1, 2021 actuarial valuation.

Colorado Public Employees Retirement Association (Completed September 2021)

Assets: \$17 billion

Actives: 51,000

Total Count: 196,000

Work Performed: Evaluation of the economic, non-economic, and investment assumptions used to model Colorado PERA's financial situation, as required by Senate Bill 18-200.

Texas Employees Retirement System Group Benefit Plan (Completed May 2020)

Assets: Unfunded retiree health plan

Actives: 221,000

Total Count: 375,000

Work Performed: Full replication audit of the August 31, 2019 OPEB actuarial valuation.

Tacoma Employees' Retirement System (October 2019)

Assets: \$2 billion

Actives: 3,000

Total Count: 7,000

Work Performed: Full replication audit of the January 1, 2019 actuarial valuation.

In addition to the significant amount of recent audit work, across the proposed SERS team, we provide retainer actuarial valuation and consulting services to 13 statewide clients. The list of these statewide clients is shown on the following page. We also provide retainer services to a significant number of municipalities, both large and small. The firm-wide list of statewide retainer clients is shown in Appendix C.



Statewide Retainer Clients of Proposed SERS Team

Annual Actuarial Valuations and Consulting Providing for All Clients Listed

Dana Woolfrey, FSA	Janie Shaw, ASA	Krysti Kiesel, ASA	Karli Fehrman, ASA	Blake Orth, FSA	System	Pension/OPEB	Assets	Actives	Retired/Inactive	Total Participants
x					Texas Employees Retirement System	Pension	\$34 billion	140,000	290,000	430,000
x			x		New Mexico Educational Retirement Board	Pension	\$16 billion	62,000	109,000	171,000
x			x		Colorado Fire and Police Pension Association	Pension	\$8 billion	16,000	10,000	26,000
x		x	x		North Dakota Teachers Fund for Retirement	Pension	\$3 billion	12,000	13,000	25,000
x		x	x		Wyoming Retirement System	Pension	\$11 billion	41,000	69,000	110,000
	x	x	x		New Mexico Public Employees Retirement Association	Pension	\$17 billion	56,000	76,000	132,000
	x	x		x	Kentucky Public Pensions Authority	Pension/OPEB	\$24 billion	172,000	215,000	387,000
	x		x		Texas Municipal Retirement System	Pension	\$39 billion	124,000	171,000	295,000
	x				Utah Retirement System	Pension	\$45 billion	100,000	140,000	240,000
				x	Hawaii Employer-Union Health Benefits Trust Fund	OPEB	\$7 billion	64,000	63,000	127,000
			x		Employees Retirement System of the State of Hawaii	Pension	\$23 billion	64,000	64,000	128,000
				x	South Carolina Public Employee Benefit Authority	OPEB	\$2 billion	186,000	101,000	287,000
				x	Teacher Retirement System of Texas	OPEB	\$4 billion	758,000	202,000	960,000

Due to his limited role on the SERS project, we did not include Joe Newton's statewide client list so that you can be assured of our transparency. However, Joe's extensive statewide client list is still of significant value to the ORSC due to the immense perspective he brings regarding current practice and trends. He is currently a lead consultant to Texas Teachers Retirement System, Texas Municipal Retirement System, Oklahoma Teachers Retirement System, Employees' Retirement System of Rhode Island, Employees Retirement System of the State of Hawaii, Texas Employees Retirement System, South Carolina Retirement System, and the Colorado Fire and Police Pension Association. He is heavily involved with the National Association of Statewide Retirement Administrators (NASRA).



SECTION 3

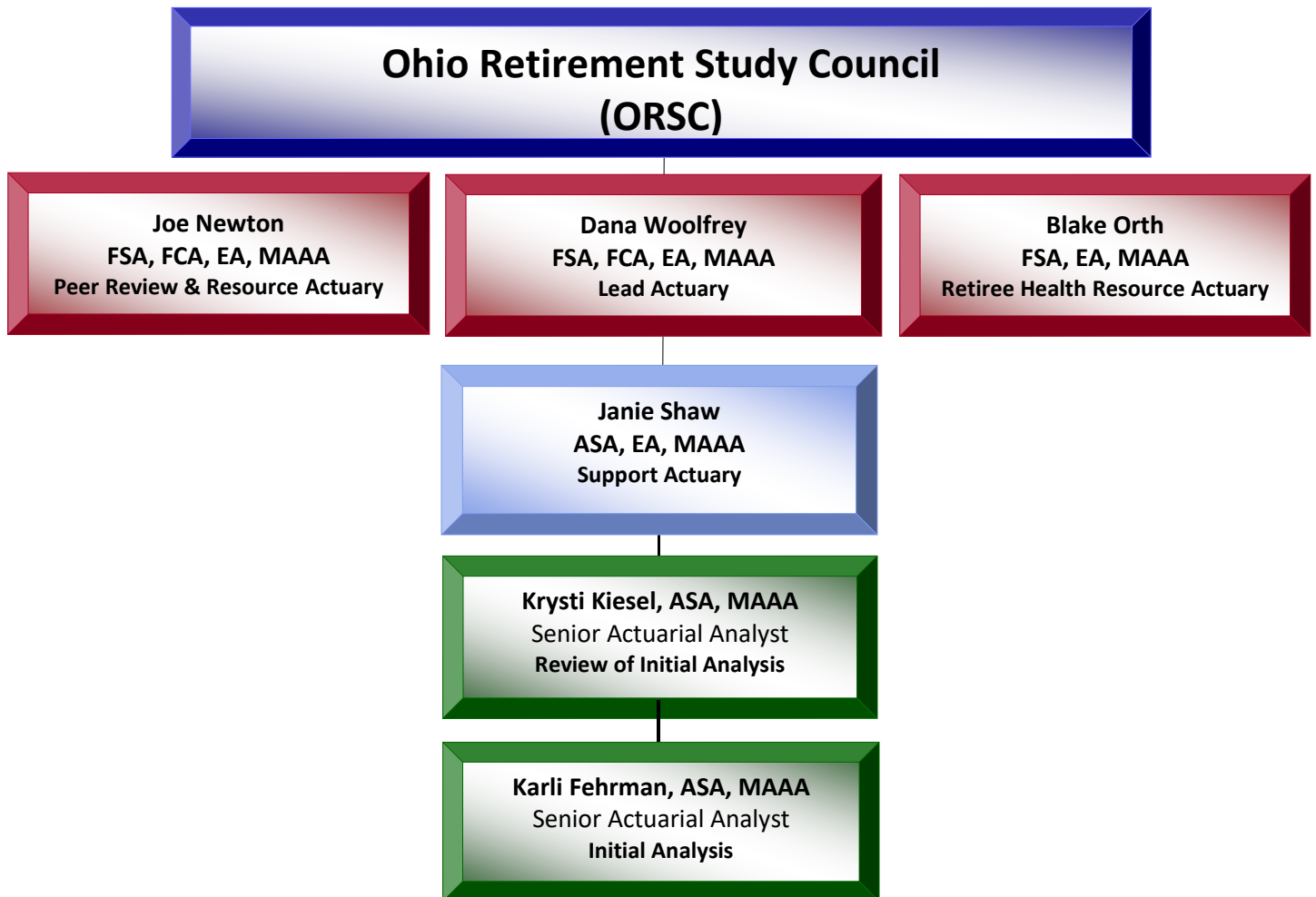
STAFF QUALIFICATIONS

Staff Qualifications

Each proposal shall, at a minimum, describe the qualifications of all management and lead professional personnel who will participate in the audit. Each personnel description shall include: (1) a resume; (2) a summary of experience each has had in performing actuarial valuations, audits, or studies of public employee retirement systems; and (3) a management plan identifying the responsibilities each will have on the audit.

GRS Response

The following shows the proposed team structure for the SERS actuarial audit. The ORSC should find reassurance in the fact that the proposed team has extensive experience auditing, transitioning large statewide plans and providing ongoing valuation services to large statewide plans. The team will be led by Dana Woolfrey, FSA. She will be assisted in a consulting capacity by Janie Shaw, ASA. Joe Newton, FSA will also serve as a resource actuary. Krysti Kiesel, ASA and Karli Fehrman, ASA will serve as analysts on this project, doing the heavy lifting on both replication valuations. Blake Orth, FSA, will serve as the technical lead on all aspects of the project pertaining to retiree health care, such as validating the per capita claims costs and health care related assumptions. Each member of the team has significant experience in the assigned role and working with the other team members in this capacity.





Dana Woolfrey, Senior Consultant, FSA, FCA, EA, MAAA, will serve as **Lead Auditing Actuary** for SERS. Dana will serve as a primary contact for ORSC and SERS, be heavily involved in the review of the Experience Study, review all results and findings, identify consulting issues and be responsible for final communications and deliverables.

She is located in GRS's Denver office and has 20 years of public sector consulting experience providing actuarial valuations, experience studies, actuarial audits, and pension consulting services for public employee retirement plans.

Dana is a Co-Lead and day-to-day contact for the New Mexico Educational Retirement Board, North Dakota Teachers Fund for Retirement, Fire and Police Pension Association of Colorado, and Texas Employees' Retirement System. She is the Principle Actuary for the Arapahoe County Retirement Plan and the Tucson Supplemental Retirement System and several other municipal plans

In the past five years, she has provided actuarial audit services to the San Francisco Employees' Retirement System, North Dakota Teachers Fund for Retirement, Oklahoma Public Employees Retirement System, the Colorado Public Employee Retirement Association, the Texas Employees' Retirement System Group Benefit Plan and the City of Tacoma.

She was a long-serving member of the GRS Professionalism Committee, which oversees GRS' internal quality control process. She currently serves as a member of the Actuarial Standards Board Pension Committee. This committee sets standards for appropriate actuarial practice in the United States, specifically as it relates to pension practice.

Dana is a Fellow of the Society of Actuaries (FSA), a Fellow of the Conference of Consulting Actuaries (FCA), an Enrolled Actuary (EA) and a Member of the American Academy of Actuaries (MAAA).



Janie Shaw, ASA, EA, MAAA, is a Consultant and Actuary with over ten years of consulting experience with public retirement plans, specializing in statewide and agent multiple employer plans. Janie will serve as a **Support Actuary** for ORSC and SERS. She will provide actuarial consulting with Dana, helping to review the experience study and identify any consulting issues that need to be brought to the ORSC's attention. She will also assist Karli and Krysti in resolving or validating any technical findings that result from the replication process.

She is currently the consulting actuary for the Kentucky Public Pensions Authority, the Texas Municipal Retirement System, the Public Employees Retirement Association of New Mexico, and the Utah Retirement System. She has presented to Legislative Committees and worked with State Legislators and City Officials on behalf of her clients to find new solutions to build a more sustainable future for the retirement system.

Janie is no stranger to replicating valuation results for large statewide systems. She led the technical transition of the Municipal Employees Retirement System of Michigan (MERS), an intensive project coding and processing thousands of funding and accounting valuations for local employers in the State, as well as the transition of the Public Employees Retirement Association of New Mexico to GRS.

Janie is an Associate of the Society of Actuaries (ASA), an Enrolled Actuary (EA) and a Member of the American Academy of Actuaries (MAAA).



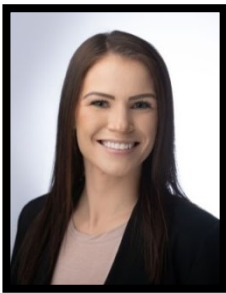
Krysti Kiesel, ASA, MAAA, is a Consultant and Actuary with ten years of experience with data, programs and report preparation for clients ranging in both size and complexity. Krysti will be the **first reviewer** of the initial replication work for SERS completed by Karli.

Her experience includes the modeling of changes in benefit provisions, assumptions, and funding policy design, as well as the projection of future liabilities and contribution requirements under various economic and demographic scenarios.

She has served a similar role to the one proposed for this project on the audit of the North Dakota Teachers Fund for Retirement and in the transition of the Kentucky Public Pensions Authority and the New Municipal Employees Retirement System of Michigan and continues to serve as the first reviewer on this ongoing retainer work.

She serves a similar role for the Arapahoe County Retirement Plan, Adams County Retirement Plan, the Tucson Supplemental Retirement System, Denver Board of Water, and the Wyoming Retirement System.

Krysti is an Associate of the Society of Actuaries (ASA) and a Member of the American Academy of Actuaries (MAAA). She is also pursuing her Enrolled Actuary (EA) under ERISA credential.



Karli Fehrman, ASA, MAAA, is a Senior Actuarial Analyst who prepares pension and retiree health valuations, benefit calculations, and benefit statements. Karli will be responsible for the **initial setup** of both replication valuations for SERS. She supports state and local government clients in Arizona, California, Colorado, Washington and Wyoming. She was also the Actuarial Analyst for the audit of both the North Dakota Teachers Fund for Retirement and the Oklahoma Public Employees Retirement System, which both required a full replication. She is the actuarial analyst on New Mexico PERA which was a large client that was recently transitioned and involved a replication valuation. Karli's takes great care on all her projects and her attention to detail make her a great asset to any team.

Karli is an Associate of the Society of Actuaries (ASA), and a Member of the American Academy of Actuaries (MAAA). She is also pursuing her Enrolled Actuary (EA) under ERISA credential.



Blake Orth, FSA, EA, MAAA, is a Consultant in our Dallas office and will serve as the **Retiree Health Resource Actuary**. Blake will serve ORSC by reviewing the SERS per capita claims development for the Retiree Health Care Valuation, assessing healthcare specific assumptions used in the valuation, and assessing retiree health care contributions and the implementation of SERS' health policies.

Blake has 12 years of actuarial consulting experience and currently oversees retiree medical valuations for over 170 governmental clients of all sizes, including state-wide systems in Texas, Hawaii, South Carolina, and Kentucky.

He is often asked to provide projections that help clients analyze the impact of prefunding benefits or alternative cost sharing provisions, eligibility provisions, and plan offerings.

Blake is a Fellow of Society of Actuaries (FSA), Enrolled Actuary (EA) under ERISA, and a Member of the American Academy of Actuaries (MAAA) and meets the Qualification Standards of the American Academy of Actuaries for issuing a pension or OPEB actuarial opinion.



Joe Newton, FSA, EA, MAAA is the Southwest Region's representative of the GRS' Office of the Chief Actuary. Joe will serve as a **peer review and resource actuary** for the ORSC on this SERS project.

Joe is the Pension Market Leader for GRS and has 20 years of professional actuarial and consulting experience with statewide and municipal public retirement systems. In this capacity, Joe functions in one of the most senior professional roles at GRS, providing significant firm-wide leadership and contribution at the highest levels. This role bridges the gap between industry requirements, internal processes, and client deliverables to further strengthen GRS' position in the marketplace. In this role as a national strategic advisor, he brings his broad experience and national perspective to the team. Joe was also recently appointed to the Associate Advisory Committee of the National Association of State Retirement Administrators (NASRA) where he provides support for NASRA's vital initiatives to support public employee benefit programs across the country.

Joe is a Fellow of the Society of Actuaries (FSA), a Fellow of the Conference of Consulting Actuaries (FCA), an Enrolled Actuary (EA) and a Member of the American Academy of Actuaries (MAAA).

[Each resume should include information on the current and past positions held with the firm, educational background, actuarial and other relevant credentials, and other relevant information to demonstrate the person's qualification.](#)

GRS Response

Please refer to Appendix A for full biographies of the proposed team members.

[Each proposal shall also include a description of the firm's procedures in the event that a key person assigned to this engagement leaves the firm during the engagement.](#)

GRS Response

We have more public sector actuaries and consultants than any other firm. Because all of our consultants are well versed in public plan issues, we are seamlessly able to accommodate staffing changes resulting from retirement or other separations. In the Southwest region alone, we have three other senior consultants who would be well qualified to lead this project and similarly we have many analysts with substantial public sector experience who could replace a member of the proposed team in the unlikely event that a person assigned to this engagement leaves the firm during the engagement.

The experience summaries should include information on the types and sizes of public employee retirement systems for which the designated staff have completed actuarial work, including whether the systems were defined benefit or defined contribution plans, the types and number of participating employers, number of participants, and other relevant indicators of plan type, size, and comparability to SERS. It is permissible to reference, rather than repeat, duplicative information provided elsewhere in the proposal. The experience summaries should describe the work performed and detail the roles and responsibilities that the individual staff had on the projects.

The management plan should specify the roles and responsibilities that each of the management and professional staff will have on the actuarial audit and include an estimated portion of the audit's time that will be spent by each on the audit.

GRS Response

The information above provides information on the types and sizes of public employee retirement systems for which the designated staff have completed work and continue to provide actuarial services. Anticipated time spent is included in the cost proposal section. Each member of the proposed team works exclusively on public sector defined benefit plans.

Actuaries included on the project team should meet the following criteria:

- Be members of the American Academy of Actuaries;
- Be enrolled actuaries with experience in governmental plans;
- Be, at a minimum, associates with at least five years of experience in public practice, although preference will be given to actuaries that are Fellows of the Society of Actuaries; and
- Have performed an actuarial valuation, audit, or study of a public employee retirement system within the last two years.

GRS Response

Your lead actuary, Dana Woolfrey, meets and exceeds the criteria. She is a Fellow of the Society of Actuaries, an Enrolled Actuary, and a Member of the American Academy of Actuaries with 20 years of public sector experience. She has performed numerous valuations and audits within the last two years.

In fact, each member of the proposed SERS audit team, including the analysts performing the initial setup of the replication of the valuation results, is a credentialed actuary with significant public sector experience. With this you have the reassurance that each step of the process is being verified by someone who knows enough to ask the right questions and isn't simply replicating the wrong result.

In the event that the firm or any personnel listed in the proposal has had any professional relationships involving the ORSC, the five Ohio public retirement systems, the State of Ohio, or its political subdivisions for the past five years, the firm shall provide a statement explaining why such relationships do not constitute a conflict of interest relative to performing the proposed review, or, if necessary, an explanation of the actions that will be taken to ensure an independent review.



GRS Response

GRS is hereby providing written assurance that neither GRS nor any individual who shall cause to deliver goods or perform services under the contract has a possible conflict of interest.

GRS consultants operate under the American Academy of Actuaries' Code of Conduct, which requires us to disclose any conflicts of interest (potential or perceived) when giving consultant advice. When a potential conflict arises, the first step is to notify the client or clients involved and discuss potential options.



SECTION 4

REFERENCES

References

Each proposal must include a list of at least three organizations, but no more than five, that may be used as references for the firm's work on actuarial audits or studies. References may be contacted to determine the quality of the work performed, personnel assigned to the project, and contract adherence. The following should be included for the references listed:

- Date of the actuarial audit work;
- Name, email address, and address of client;
- Name, email address, and telephone number of an individual in the client organization who is familiar with the work; and
- Description of the work performed.

GRS Response

Reference Name: **North Dakota Teachers Fund for Retirement
(Completed January 2023)**

Account Primary Contact: Ms. Jan Murtha
Title: Executive Director
Address: 165 East Century Avenue, Suite 3
Bismarck, North Dakota 58503

Telephone Number: (701) 328-9895
Email Address: janilynmurtha@nd.gov
Scope of Work: Actuarial audit of the July 1, 2021 actuarial valuation and supporting experience study

Deliverable:
<https://www.rio.nd.gov/sites/www/files/documents/PDFs/TFFR/Reports/grsauditreport2022.pdf>

Reference Name: **Oklahoma Public Employees Retirement System
(Completed August 2022)**

Account Primary Contact: Mr. Brian Wolf
Title: Chief Financial Officer and Director of Finance
Address: 5400 N Grand Blvd # 400
Oklahoma City, OK 73112

Telephone Number: (405) 858-6725
Email Address: BWolf@opers.ok.gov
Scope of Work: Actuarial Audit of the July 1, 2021 Oklahoma Public Employees Retirement System (OPERS) and Uniform Retirement System for Justices and Judges (URSJJ) Actuarial Valuations

Deliverable: Included in Appendix E



Reference Name: **Colorado Public Employees Retirement Association
(Completed September 2021)**

Account Primary Contact: Ms. Natalie Mullis
Title: Director
Address: Colorado Legislative Council Staff
200 East Colfax Avenue
State Capitol Building, Room 029
Denver, CO 80203-1784

Telephone Number: 303) 866-3521
Email Address: natalie.mullis@state.co.us
Scope of Work: Review of the economic and demographic assumptions used to model Colorado PERA's financial situation. Similar to the proposed work, the client was an oversight body (Legislated Council Staff) rather the Retirement Board of Colorado PERA. Colorado PERA covers a School Division covering teachers and staff.

Deliverable:
https://leg.colorado.gov/sites/default/files/images/lcs/grs_pera_2021_assumptionreview_report.pdf

While each of the above represents projects that were substantially similar to the proposed work, their one-time nature does not allow for the same level of evidence of the quality of our work, our timeliness and our communication. We invite you to contact either of the following large statewide retainer clients for a more thorough discussion of the quality of the work by the proposed team.

Reference Name: **Texas Employees Retirement System**

Account Primary Contact: Ms. Jennifer Chambers
Title: Director of Government Relations and Special Projects
Telephone Number: (512) 426-6732
Email Address: Jennifer.Chambers@ers.texas.gov

Reference Name: **New Mexico Educational Retirement Board**

Account Primary Contact: Mr. David Archuleta
Title: Executive Director
Telephone Number: (505) 476-6152
Email Address: David.Archuleta@erb.nm.gov



SECTION 5

METHODOLOGY, WORK PRODUCT, AND TIMELINE

METHODOLOGY, WORK PRODUCT, AND TIMELINE

Each proposal shall describe the proposed methodology for each element of the components listed under Scope of Audit. The description should include specific techniques that will be used, including anticipated sampling techniques and sizes, and proposed sources of data and information. You may propose alternative ways of addressing the elements of the audit's scope.

GRS Response

Listed below is the basic approach we would use in performing the audit. In regards to “sampling techniques” or “alternative ways of addressing the elements of the audit’s scope”, GRS does not recommend deviating from the full replication. ORSC only performs an audit of a particular system every 10 years. The Retirement System performs audits of their own; however, their most recent audit was a sampling audit and cited the upcoming full replication audit by the ORSC as justification for doing so.



Hold Planning Meeting

We will have a meeting with the ORSC, SERS staff and the retained actuary after we receive notification that we have been selected to provide actuarial audit services. We believe that meeting with you upfront to clarify the deliverables is critical to developing a strong working relationship. We will discuss any special concerns that you may have. GRS will review the flow of events for the replication valuations and make note of important dates and issues to be addressed. The result of the meeting is a work plan for the upcoming valuation process and confirmation of roles in procuring the necessary items for the audit. We will hold monthly planning meetings via conference call, as needed.



Review Current Plan Provisions

GRS will review relevant statutes, actuarial standards, and request and review information such as plan documents, summary plan descriptions, bargaining agreements, and other communications to active and retired members, in order to evaluate the nature of the plan benefits for each respective plans (Basic Benefits, Retiree Health Care).



Review Experience Study and Assumptions

GRS will review the assumption set to review that the actuarial assumptions currently being used are reasonable, appropriate and complete. GRS will review the plan experience in the experience study and ensure that the recommendations are supported. GRS will also review the historical plan gain loss experience to ensure that it is consistent with the observed experience and that the recommendations will serve to minimize gains and losses going forward. GRS will determine if assumptions, methods and funding policy align with current best practice recommendations.



Request Member Data

GRS will request data files including records on each person who is actively participating in the plan as of the valuation date, receiving a benefit as of the valuation date, or who retains a right to future benefits. GRS will request data as of June 30, 2022 and as of June 30, 2023 so that data can be validated against the prior year. We request that the census information be provided electronically, in Access, Excel, or some other format. GRS and SERS Staff will discuss and decide upon a secure method of data transmission, for example, with a secure FTP site (file transfer protocol). ***GRS has 1,000 public sector clients and has never had a breach of confidential information in its entire history, which dates back to 1938.***



Prepare Data

Once data has been received, it is checked for general reasonableness, and compared with the prior year. Individual records are reviewed to ensure that the data changed as expected from year to year. GRS utilizes its Data Analysis tool that helps with the manipulation and analysis of valuation data. For example, we would confirm that active member test cases had an increase in service and that their reported pay amounts compare well between the two years. Issues found by the reasonableness check that could impact the valuation results would be sent to SERS staff for their input to ensure the differences are justified and there are no systemic issues.



Receive Financial Data

We will request asset data from the plan. We will review the information for reasonableness, including comparing the asset return against market indices and comparing the contributions and benefit payments against projected amounts. We will reconcile differences with the investment manager or plan staff.



Develop OPEB Per Capita Costs

Each relevant benefit type needs an initial per capita cost for the group. This is the baseline starting point for the project and requires short-term health actuarial expertise. We call it “short-term” because the initial per capita costs for each benefit type are the total underlying costs (not necessarily the premium) expected for the year following the valuation date for all employees and retirees for the respective benefit types.

The initial composite per capita costs are then converted to a whole table of age-sex-specific initial per capita costs for each benefit type (including before and after age 65).

Determining how much the plan “costs” on a per person basis is an important baseline. However, costs increase with age, so this process is not as simple as merely adding up all the claims for the year and then dividing by the number of eligible members for the year. GRS has substantial experience with developing per-capita health costs, as it is a key step in the OPEB valuation process. Using the claims as well as the underlying aging factors and other actuarial assumptions, GRS will develop the average claims costs by age.

The calculation of current per-capita retiree claim costs for a group is often based entirely on the group’s own experience. We obtain data from the plan administrator, including claims, premiums, enrollment data and administrative and other expenses. Reported data is sorted for each subgroup for which rates are indicated.

GRS will review reported data for completeness and reasonableness. Next, claim completion factors are determined and applied so the rest of the claim year can be modeled. Incurred monthly claim costs per member are then determined.

Appropriate trend rates are applied to project these claim costs to the expected payment dates. Expenses, including administrative and stop loss premiums, are added and adjustments are made, if indicated. Finally, age and gender specific claim cost factors are applied to develop per capita claim costs for each current and projected retiree.



Produce Replication Valuation Results

Data files will be run through our valuation programs to produce initial results. The results will be thoroughly checked, and costs and liabilities will be developed along with the contribution rate. Any material differences will be investigated. If there are material differences which cannot be resolved with the retained actuary, GRS may request additional test life detail.



Prepare Reports

The audit report will be drafted. Key findings will be clearly summarized and any recommendations will clearly identify to whom they are directed (Legislature, SERS Board, ORSC).



Present Reports

GRS will present the audit report to the ORSC at an in-person meeting (or virtually should you wish). GRS will make sure that all key findings are understandable for all members of the Council. In addition to the key findings relevant to SERS, GRS will also provide peer plan and trend information.

In describing the proposed methodology, also identify the type and level of assistance that you anticipate will be needed from the staff of SERS and the consulting actuary, including: assistance to understand the operations and records of SERS; assistance to understand the actuarial assumptions, method, and procedures; and assistance to access, obtain, and analyze information needed for the audit. The description of the proposed methodology shall also identify meetings, interviews, programming support, space needs, etc., that you anticipate requiring from SERS and the consulting actuary.

GRS Response

GRS does not anticipate that the audit will place a significant burden on SERS staff resources. There will be an initial planning call, transfer of the data (that was already compiled for use by the retained actuary), and potential review of initial findings, depending on the type of finding. It is possible that SERS staff may need to provide clarification on benefits administration practices or on data fields, should there be any question that arises.

Each proposal shall also include one or more examples of work product(s) from actuarial valuations or audits that may help to illustrate the proposed methodology and final work product.

GRS Response

1. The actuarial audit report for the North Dakota Teachers Fund for Retirement is available here:

<https://www.rio.nd.gov/sites/www/files/documents/PDFs/TFFR/Reports/grsauditreport2022.pdf>

2. The review of Colorado Public Employees Retirement Association is available here:

https://leg.colorado.gov/sites/default/files/images/lcs/grs_pera_2021_assumptionreview_report.pdf

3. The actuarial audit report for Oklahoma Public Employees Retirement System is included in Appendix E.



Each proposal shall provide an estimated date that the final report will be submitted and the projected timeline or the anticipated work requirements and milestone dates to reach that date.

GRS Response

The timeline below shows a tentative schedule which would start upon contract award.

TASK DESCRIPTION		RESPONSIBILITY				
		GRS	SERS	ORSC	CavMac	Week
PROJECT PLANNING	1 Kick-off Meeting with SERS Staff and Retained Actuary					
	a.) Submit initial data request to SERS and Retained Actuary (cc ORSC)	X				1
	d.) Virtual kick off meeting	X	X	X	X	1
DATA	2 Process Information					
	a.) Provide GRS with the information requested of SERS		X			2
	b.) Provide GRS with the information requested of Retained Actuary				X	2
	c.) Complete review of the valuation data files	X				3
ASSUMPTIONS AND METHODS	3 Assess Appropriateness of Actuarial Assumptions and Methods					
	a.) Complete review of actuarial assumptions - Economic assumptions - Demographic assumptions - Most recent actuarial experience study	X				2-6
ACTUARIAL LIABILITIES	4 Actuarial Liabilities					
	a.) Begin coding of valuation system to replicate actuarial valuation	X				3-8
	b.) Discuss discrepancies with retained actuary, if necessary	X		optional	X	9-10
	c.) Complete replication of actuarial valuation results, including funding computations and contribution rates	X				10-11
ACTUARIAL VALUATION AND REPORT	5 Valuation Report					
	a.) Review retained actuary's actuarial valuation reports - Review for content, clarity, and accuracy - Compliance with relevant Actuarial Standards of Practice (ASOPs) - Reasonableness and completeness of results - Assessment of disclosures under GASB reporting standards	X				12
REPORT AND MEETINGS	6 Communication of Findings					
	a.) Draft report distributed to ORSC and the Retained Actuary for review (cc to SERS)	X				13
	b.) Conference call with GRS, ORSC and Retained Actuary to discuss report (SERS optional)	X	X	X	X	14
	b.) GRS receives formal comments from ORSC and the retained actuary		X		X	15
	c.) Final report issued by GRS	X				16
	d.) Presentation to ORSC	X	X	X	X	TBD

All members of the proposed service team have experience meeting actuarial audit and client transition deadlines of large, complex retirement systems and know what it takes to get the work done!



SECTION 6

ADDITIONAL INFORMATION

Additional Information

It is permissible to include additional information that will be helpful to gain an understanding of the proposal. This may include diagrams, excerpts from reports, or other explanatory documentation that would clarify or substantiate the proposal. Any material included here should be specifically referenced elsewhere in the proposal.

GRS Response

None



SECTION 7

GLOSSARY

Glossary

Each proposal shall provide a glossary of all abbreviations, acronyms, and technical terms used to describe the services or products proposed. This glossary should be provided even if the terms are described or defined when first used in the proposal response.

GRS Response

The Government Finance Officers Association defines different levels of actuarial audits as follows:

In a level one, or full-scope, actuarial audit, the reviewing actuary fully replicates the original actuarial valuation, based on the same census data, assumptions, and actuarial methods used by the plan's consulting actuary. In addition, the reviewing actuary examines the consulting actuary's methods and assumptions for reasonableness and internal consistency.

In a level two, or sampling, actuarial audit, the reviewing actuary does not fully replicate the consulting actuary's valuation, but instead uses a sampling of the plan's participant data to test the results of the valuation. The reviewing actuary also examines the consulting actuary's methods and assumptions for reasonableness and internal consistency.

In a level three actuarial audit, the reviewing actuary examines the consulting actuary's methods and assumptions for reasonableness and internal consistency, but does not perform actuarial calculations.

GRS expects that the SERS Scope contemplates a level one full-replication audit. Other firms may offer a lower fee to complete a level two or sampling audit to fulfill the scope. Evaluators should be aware that this is a different work product.

As noted earlier, GRS does not recommend completing the smaller scope sampling audit as the ORSC only completes audits of each system every 10 years and the SERS Board recently only completed a sampling audit with the expectation that the ORSC would soon be completing a full replication audit.

SECTION 8

COST INFORMATION

Cost Information

The pricing summary should include a breakdown of costs per element listed under Scope of Audit, including: personnel costs (including hourly rates and estimated hours for professional and clerical staff assigned to the audit); travel and lodging; data processing costs; materials, and any other potential costs. The cost estimates in the pricing summary must include all necessary charges to complete the audit and must be a "not to exceed" figure.

GRS Response

We have included our hourly rates and estimated hours on each piece of the Scope of Audit. Please note that the project is not priced expecting to recoup hourly rate multiplied by estimated hours. The not to exceed fee and estimated hours include travel time and expenses for one in-person meeting with both Dana and Janie to present the findings of the Audit.

	Dana Woolfrey, FSA	Janie Shaw, ASA	Krysti Kiesel, ASA	Karli Fehrman, ASA	Joe Newton, FSA	Blake Orth, FSA	Total Hours	Fee
Billable Rate	\$474	\$435	\$345	\$214	\$606	\$412		

Hours Spent on Scope of Audit:

Actuarial audit for the primary purpose of independent verification and analysis of assumptions, procedures, and methods used by the SERS consulting actuary, as applicable for:

<ul style="list-style-type: none"> Report on the Annual Basic Benefits Valuation of the School Employees Retirement System of Ohio prepared as of June 30, 2023: 	45	35	25	55	2	0	162	\$54,000
<ul style="list-style-type: none"> School Employees Retirement System Experience Study Five-Year Period Ending June 30, 2020: 	12	10	1	3	2	3	31	\$10,000
<ul style="list-style-type: none"> Report on the Retiree Health Care Valuation of the School Employees Retirement System of Ohio prepared as of June 30, 2023, including GASB 74 disclosures. 	25	20	20	40	1	15	121	<u>\$35,000</u> *

Total Not to Exceed Fee

\$99,000

*Assumes efficiencies created by performing the replication of the Annual Basic Benefits Valuation. Not a standalone fee.



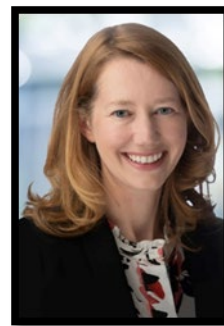
APPENDIX A

TEAM RESUMES

Dana Woolfrey, FSA, EA, FCA, MAAA

Senior Consultant

dana.woolfrey@grsconsulting.com



Expertise

Dana Woolfrey is a Senior Consultant in GRS' Denver, Colorado office. She has 20 years of public sector pension consulting experience. During her career, Dana has worked with clients in Alaska, Arizona, California, Colorado, Illinois, Maryland, Minnesota, Rhode Island, Utah, Washington and Wyoming.

Dana's actuarial consulting experience includes annual valuation services for both pension plans and retiree health care plans, pension plan redesign, including both traditional defined benefit structures as well as hybrid designs, and associated cost studies. She also has significant experience with funding projections and stochastic analysis, experience studies, and actuarial audits.

Dana has worked with multiple pension systems to implement new plan designs and benefit approaches that respond to recent changes in the public sector pension environment. As part of the plan redesign process, Dana became the primary engineer of GRS' MagValPlus, our first version of comprehensive projection software designed to project costs related to changes in benefits and economic assumptions. Dana continues to contribute to GRS' effort to expand projection software tools available to clients, such as GRS Foresight®, our most recent version of projection software.

Professional Designations

- Fellow, Society of Actuaries
- Fellow, Conference of Consulting Actuaries
- Enrolled Actuary, ERISA
- Member, American Academy of Actuaries

Professional Affiliations

- Actuarial Standards Board, Pension Committee

Presentations

Dana has served as a speaker at annual meetings sponsored by the Conference of Consulting Actuaries (CCA) where she covered the sessions, "Risk Sharing Plan Designs" and "Recent Public Sector Trends." The sessions covered topics such as cash balance plans, variable benefit plans, and novel funding policy approaches. She also recently spoke at the Public Pension Financial Forum (P2F2) on the topic of sustainable plan design and funding policies.

Education

Bachelor of Science, Mathematics, Chemistry, Hope College, Michigan

Master of Science, Computer Science, Specialization in Computational Operations Research

Janie Shaw, ASA, EA, MAAA

Consultant

janie.shaw@grsconsulting.com



Expertise

Janie Shaw is a Consultant in the GRS Dallas, Texas office. She has more than 10 years of public sector pension consulting experience. Janie has experience working with statewide and municipal retirement systems in multiple states including Kentucky, Michigan, New Mexico, North Carolina, Oklahoma, Texas, and Utah.

Janie's actuarial consulting experience includes annual valuation services for both pension and OPEB plans. Her experience has focused on plan sustainability through funding policy and benefit plan design. She has worked with her clients to find long-term solutions for all Stakeholders that build a more sustainable future for the retirement system. She has also worked with her clients to implement contribution rate stabilization policies that provide more predictable pension costs that work within the Stakeholders' budgets but also provide sound funding for the retirement system.

She also has significant experience with analyzing and revising demographic and economic assumptions through actuarial experience studies and actuarial audits. Janie's compliance work and experience covers GASB reporting requirements as they apply to pension and OPEB plans, 415(b) calculations and non-discrimination testing for DB and DC plans.

Professional Designations

- Associate, Society of Actuaries
- Enrolled Actuary
- Member, American Academy of Actuaries

Education

Bachelor of Science, Mathematics, University of Texas, Austin

Krysti Kiesel, ASA, MAAA

Consultant

krysti.kiesel@grsconsulting.com



Expertise

Krysti Kiesel is a Consultant in GRS' Denver, Colorado office. She has more than 10 years of experience providing actuarial work to statewide and local retirement systems. She has worked with clients in Kentucky, North Dakota, New Mexico, Colorado, Arizona, Wyoming, Texas, and Oklahoma.

Krysti's actuarial responsibilities include the preparation of pension and retiree health valuations, plan design studies, funding policy analysis, experience studies, actuarial audits, and projections. She also supports her clients with plan administration through the preparation of benefit calculations, benefit statements, and Domestic Relations Order (DRO) calculations. Krysti's defined benefit plan expertise extends to traditional, hybrid, and cash balance plans, DROP programs, cost-of-living provisions, and service credit purchase options.

Professional Designations

- Associate, Society of Actuaries
- Member, American Academy of Actuaries

Krysti is currently pursuing her Enrolled Actuary designation.

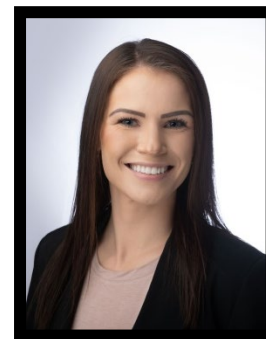
Education

Bachelor of Arts, Mathematical Economics, Colorado College, Colorado Springs, Colorado Teaching certificate, secondary school mathematics

Karli Fehrman, ASA, MAAA

Senior Analyst

karli.fehrman@grsconsulting.com



Expertise

Karli Fehrman is a Senior Analyst in GRS' Denver, Colorado office.

Karli's actuarial responsibilities include the preparation of pension and retiree health valuations, benefit calculations, and benefit statements. She supports state and local government clients in Arizona, California, Colorado, Washington and Wyoming.

Professional Designations

- Associate, Society of Actuaries
- Member, American Academy of Actuaries

Karli is currently pursuing her Enrolled Actuary designation.

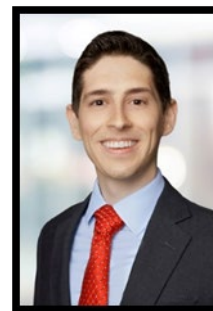
Education

Bachelor of Science in Business Administration, Actuarial Science, University of Nebraska-Lincoln, Lincoln, Nebraska, Minors in Finance and Mathematics

Blake Orth, FSA, EA, MAAA

Consultant

Blake.Orth@GRSConsulting.com



Expertise

Blake is a Consultant in GRS' Dallas, Texas office. He has more than 12 years of public sector actuarial and benefits consulting experience. Blake oversees retiree medical valuations for over 170 governmental clients of all size, including state-wide systems in Texas, Hawaii, South Carolina, and Kentucky.

His retiree medical work covers valuations, liability and cost projections, reviews of per capita claims estimates, and both prefunding and plan redesign studies. Blake's pension experience covers actuarial valuations, liability and funding projections, experience studies, and benefit certifications.

Professional Designations

- Fellow, Society of Actuaries
- Enrolled Actuary, ERISA
- Member, American Academy of Actuaries

Education

Bachelor of Business Administration, Finance, Southern Methodist University, Summa Cum Laude

Bachelor of Science, Mathematics, Southern Methodist University, Summa Cum Laude

Bachelor of Science, Management Science, Southern Methodist University, Summa Cum Laude

Joseph Newton, FSA, EA, FCA, MAAA

Pension Market Leader & Actuary

joe.newton@grsconsulting.com



Expertise

Joe Newton is a nationally recognized public sector actuary who works with numerous statewide, regional, and local retirement systems and is located in GRS' Dallas, Texas office. He has more than 25 years of actuarial and benefits consulting experience. Joe's clients are located in Colorado, Hawaii, Rhode Island, South Carolina, and Texas.

Joe is the Pension Market Leader for GRS. In this capacity, Joe functions in one of the most senior professional roles in GRS, providing significant firm-wide leadership and contribution at the highest levels. This role bridges the gap between industry requirements, internal processes, and client deliverables to further strengthen GRS' position in the marketplace.

As well respected in our industry, several of Joe's projects have changed the way services are provided, and how pensions are understood, in the public sector community. There are several examples of plan redesign projects, including optimized funding mechanisms and creative plan design features that originated with Joe's consulting and have been further implemented by other systems. Joe has a unique ability to create innovative solutions to specific problems, and then be able to communicate these sometimes complex solutions to all stakeholders.

Joe stresses a top-down approach to pension plan consulting, which integrates the major goals of stakeholders, addresses human capital needs, and utilizes projection and valuation techniques that manage risk. He has built an enviable reputation in the public sector actuarial community for his creative ability to communicate difficult and complex ideas to Boards and Stakeholders. Most importantly, Joe believes he has helped its clients increase their credibility with the legislative and executive branches of the state government. In many cases, we have annual educational sessions for legislative leaders are of paramount importance in establishing and maintaining this credibility.

Joe is an appointed member on the Associate Advisory Committee of the National Association of State Retirement Administrators (NASRA) where he provides support for NASRA's vital initiatives to support public employee benefit programs across the country.

Professional Designations

- Fellow, Society of Actuaries
- Enrolled Actuary
- Fellow, Conference of Consulting Actuaries
- Member, American Academy of Actuaries

Education

Bachelor of Arts, Mathematics, and Business Administration, Austin College (Sherman, Texas)

APPENDIX B

GRS AUDIT CLIENT LIST

GRS Audit Client List

Client Name	Year of Audit	Firm Audited	Scope of Audit	Plans in Audit
Indiana Public Retirement System (INPRS)	2023	Cavanaugh Macdonald & Nyhart	An Actuarial Audit of the June 30, 2022 Actuarial Valuations of the eight Pension Defined Benefit Plans.	Public Employees' Retirement Fund (PERF DB), Teachers' Retirement Fund Pre-1996 Account (TRF Pre-'96 DB), Teachers' Retirement Fund 1996 Account (TRF '96 DB), 1977 Police Officers' and Firefighters' Retirement Fund ('77 Fund), Judges Retirement System (JRS), Excise Gaming and Conservation Officers' Retirement Fund (EG&C), Prosecuting Attorney's Retirement Fund (PARF) Legislators' Defined Benefit Retirement Fund (LE DB), OPEB Defined Benefit Plans as follows: State Personnel Plan Indiana State Police Plan, Conservation and Excise Police Plan Legislature Plan.
Florida Retirement System	2023	Foster & Foster	Actuarial Valuation as of July 1, 2023 including GASB Statement No. 75 Disclosures for the fiscal year ending June 30, 2024 for the OPEB Program prepared by the OPEB Program actuaries, Foster & Foster, dated October 31, 2023.	Florida Retirement System OPEB Plans
City and County of San Francisco Employees' Retirement System (SFERS)	2023	Cherion	An actuarial audit of the July 1, 2022 actuarial valuation of the SFERS . This actuarial review involves an independent verification and analysis of the assumptions, procedures, methods, and conclusions used by the retained actuary in the 2022 actuarial valuation of SFERS.	City and County of San Francisco Employees' Retirement System (SFERS)
Teachers' Retirement System of the State of Illinois (TRS)	2023	Segal	An Actuarial Audit of the June 30, 2022 Actuarial Valuation of the T Illinois TRS.	Teachers' Retirement System of the State of Illinois (TRS)

GRS Audit Client List

Client Name	Year of Audit	Firm Audited	Scope of Audit	Plans in Audit
City of Lubbock, Texas	2023	Rudd and Wisdom	An actuarial audit of the December 31, 2022 Actuarial Valuation of the LFPF.	Lubbock Fire Pension Fund (LFPF)
Nebraska Public Employees Retirement System	2022	Cavanaugh Macdonald	An actuarial audit of the 2021 actuarial valuations prepared for NPERS.	State Employees' Retirement System Cash Balance Benefit Fund, County Employees' Retirement System Cash Balance Benefit Fund, School Retirement System, State Patrol Retirement System, Judges Retirement System
Port of Houston Authority	2022	Milliman	An actuarial audit of the August 1, 2021 Actuarial Valuation of the Port of Houston Authority Restated Retirement Plan.	Port of Houston Authority
Oklahoma Public Employees Retirement System	2022	Cavanaugh Macdonald	An actuarial audit of the July 1, 2021 Actuarial Valuation of the OPERS and URSJJ.	Oklahoma Public Employees Retirement System (OPERS), Uniform Retirement System for Justices & Judges (URSJJ)
Kansas City Public School Retirement System (KCPSRS)	2022	Cavanaugh Macdonald	Actuarial review of the January 1, 2022 actuarial valuation for the KCPSRS.	Kansas City Public School Retirement System (KCPSRS)
North Dakota Teachers' Fund for Retirement	2022	Segal	Actuarial audit of the July 1, 2021 Actuarial Valuation of the NDTFFR.	North Dakota Teachers Fund for Retirement (NDTFFR)
Texas Hospital Association	2022	Rudd and Wisdom	Actuarial audit of the Actuarial Valuation as of March 1, 2021 of the Retirement Plan for Citizens Medical Center.	Citizens Medical Center
Texas Hospital Association	2022	Rudd and Wisdom	Actuarial audit of the Actuarial Valuation as of October 1, 2021 of the JPS Pension Plan.	JPS
Oregon Secretary of State	2022	Milliman	Actuarial review of the Oregon PERS.	Oregon Public Employees Retirement System (PERS)

GRS Audit Client List

Client Name	Year of Audit	Firm Audited	Scope of Audit	Plans in Audit
Commonwealth of Virginia Joint Legislative Audit and Review Commission	2022	Cavanaugh MacDonald	2022 Quadrennial Actuarial Audit of VRS.	Virginia Retirement System
North Carolina Retirement System	2022	Buck & Segal	Actuarial Review of the 2022 Accounting Disclosures related to the North Carolina Retirement Systems.	The Teachers and State Employees Retirement System of North Carolina (TSERS); The Local Governmental Employees Retirement System of North Carolina (LGERS); The Register of Deeds Supplemental Pension Fund of North Carolina (RODSPF); The North Carolina Retiree Health Benefits Plan (RHB); and The Disability Income Plan of North Carolina (DIPNC)
California Public Employees' Retirement System	2021	Actuarial Office (ACTO) of CalPERS	A comprehensive Review of the 2021 Experience Study of the CalPERS.	California Public Employees' Retirement System (CalPERS)
Virginia 529 Prepaid Tuition Program	2021	Milliman	2021 Quadrennial Actuarial Audit of the Virginia 529 Prepaid Tuition Program.	Virginia529 Prepaid Tuition Program
Commonwealth of Virginia	2021	Aon Hewitt	2021 Actuarial Review of the Virginia SEHIP.	Virginia State Employee Health Insurance Program (SEHIP)
Colorado Legislative Council	2021	Segal	Evaluation of the economic, non-economic, and investment assumptions used to model Colorado PERA's financial situation, as required by Senate Bill 18-200.	Colorado Public Employees Retirement System (PERA)
Florida Auditor General	2021	Milliman	Actuarial review of the actuarial valuations for the FRS, DBP and HIS with respect to GASB Statement No. 67 Disclosures for the fiscal year ended June 30, 2021.	Florida Retirement System, Defined Benefit Plan, Health Insurance Subsidy

GRS Audit Client List

Client Name	Year of Audit	Firm Audited	Scope of Audit	Plans in Audit
Florida Auditor General	2021	Foster and Foster	Actuarial review of the July 1, 2021 actuarial valuation for the State of Florida, including GASB Statement No. 76 disclosures for the fiscal year ended June 30, 2018 for the OPEB program.	Florida Department of Management Services (DMS)
Texas Emergency Services Retirement System	2021	Rudd and Wisdom	Actuarial audit of the August 31, 2020 valuation of the TESRS.	Texas Emergency Services Retirement System (TESRS)
Missouri State Employees' Retirement System	2021	Cavanaugh Macdonald	Replication valuation of the June 30, 2021 Missouri Employees Retirement System valuation, review of the Judges valuation, and a review of the most recent 5-year experience study.	Missouri Employees Retirement System (MOSERS), Judges Retirement System (JRS)
State Teachers Retirement System of Ohio (on behalf of Crowe LLP)	2021	Cherion	Actuarial Specialist Review of the STRS of Ohio in Connection with the Financial Audit for STRS Ohio for the Year-Ended June 30, 2021.	State Teachers Retirement System of Ohio (STRS)
New Castle County Employees' Retirement Plan	2020	Boomershine Consulting Group	Actuarial audit of the January 1, 2019 actuarial valuation for the NCCERP and CCSP0.	New Castle County Employees' Retirement Plans (NCCERP) and County Contributions to State for Police Officers
Alaska Retirement Management Board	2020	Buck	Actuarial review of June 30, 2019 valuations for the PERS DB and TRS DB, PERS DCR, TRS DCR.	State of Alaska Public Employees' Retirement System Defined Benefit Retirement Plan (PERS DB), Teachers' Retirement System Defined Benefit Retirement Plan (TRS DB) and the State of Alaska Public Employees' Retirement System Defined Contribution Retirement Plan (PERS DCR) and Teachers' Retirement System Defined Contribution Retirement Plan (TRS DCR)
Employees Retirement System of Texas	2020	Rudd & Wisdom	Actuarial audit of the August 31, 2019 GASB 74 valuation for the ERS of Texas.	Employees Retirement System of Texas Group Benefit Plan
Iowa Public Employees' Retirement System	2020	Cavanaugh Macdonald	An audit of the June 30, 2019 Actuarial Valuation of the IPERS.	An audit of the June 30, 2019 Actuarial Valuation of the IPERS.

GRS Audit Client List

Client Name	Year of Audit	Firm Audited	Scope of Audit	Plans in Audit
Teachers Retirement System of Montana	2020	Teachers Retirement System of Montana	Actuarial audit of the July 1, 2019 actuarial valuation of the MTRS.	Teacher Retirement System of Montana (MTRS)
Tacoma Employees' Retirement System (TERS)	2019	Milliman	Actuarial audit of the January 1, 2019 actuarial valuation for the TERS.	Actuarial audit of the January 1, 2019 actuarial valuation for the TERS.
Oregon Public Employees Retirement System (Oregon PERS)	2019	Milliman	A study was conducted pursuant to the 2018 Oregon House Bill 4163, Section 11. The study looked at the reasonableness and consistency of the methods, assumptions, data used in the December 31, 2017 actuarial valuation.	Oregon Public Employees Retirement System (PERS)
Delaware Public Employees' Retirement System	2019	Cheiron	Full Replication Audit of the June 30, 2018 Actuarial Valuations of the Delaware PERS.	Delaware State Employees' Pension Plan, Delaware State Police Pension Plan, Delaware Closed State Police Pension Plan, Delaware State Judiciary Pension Plan, Delaware County & Municipal Employees' Pension Plan, Delaware County & Municipal Police/Fire Pension Plan, Delaware State Volunteer Firemen's Pension Plan, Diamond State Port Corporation Pension Plan
Public Employees' Retirement System of Nevada	2018	Segal	Actuarial review of June 30, 2017 valuation and the June 30, 2016 Experience Study for PERS of NV.	Public Employee Retirement System of Nevada (PERS of Nevada)
Lower Colorado River Authority	2018	Rudd & Wisdom	An actuarial audit of the January 1, 2018 actuarial valuation for the LCRA.	Lower Colorado River Authority Retirement Plan
Florida Retirement System	2018	Milliman	Actuarial review of the June 30, 2018 actuarial valuations for the FRS, BDP, and HIS with respect to GASB Statement No. 67 disclosures.	Florida Retirement System (FRS), Defined Benefit Plan (DBP), Health Insurance Subsidy (HIS)

GRS Audit Client List

Client Name	Year of Audit	Firm Audited	Scope of Audit	Plans in Audit
Florida Auditor General	2018	Foster and Foster	Actuarial review of the July 1, 2017 actuarial valuation for the State of Florida, including GASB Statement No. 76 disclosures for the fiscal year ended June 30, 2018 for the OPEB program.	Florida Department of Management Services (DMS)
Commonwealth of Virginia Joint Legislative Audit and Review Commission	2018	Cavanaugh Macdonald Consulting	A non-replication actuarial audit of the assumptions, methods, procedures and conclusions used in the June 30, 2017 actuarial valuations for VRS.	Virginia Retirement System
Ventura County Employees' Retirement Association	2017	Segal	Actuarial Audit of the July 1, 2016 Actuarial Valuation, the July 1, 2011 through June 30, 2014 Experience Study and the June 30, 2015 Economic Actuarial Assumption Review of the Retirement System administered by the Ventura County Employees' Retirement Association (VCERA)	Ventura County Employees' Retirement Association
Public Employees' Retirement System of Mississippi	2017	Cavanaugh Macdonald Consulting	Actuarial Audit of the June 30, 2016 Actuarial Valuations for various Mississippi plans - MRS, MHSPRS, SLRP & PERS.	MRS, MHSPRS, SLRP, PERS
Clinton Township Fire and Police Retirement System	2017	Rodwan Consulting Company	Actuarial Audit of the March 31, 2016 Actuarial Valuation	Clinton Township Fire and Police Retirement System (CTFPRS)
Texas County & District Retirement System (TCDRS)	2017	Milliman	Audit of the December 31, 2016 Actuarial Valuation	Texas County & District Retirement System
Maine Public Employees Retirement System	2016	Cheiron	Audit of the June 30, 2015 Actuarial Valuation of the Maine Public Employees Retirement System (MainePERS)	Maine Public Employees Retirement System
San Joaquin County Employees' Retirement Association	2016	Cheiron	An Actuarial Audit of the January 1, 2016 Actuarial Valuation and the January 1, 2013 through December 31, 2015 Experience Study of the Retirement System administered by the San Joaquin County Employees' Retirement Association (SJCERA).	San Joaquin County Employees' Retirement Association

GRS Audit Client List

Client Name	Year of Audit	Firm Audited	Scope of Audit	Plans in Audit
Florida Retirement System	2016	Department of Management Services (DMS)	Actuarial Review of Actuarial Analysis and Reporting Requirements Related to GASB Statement No. 67 for the Florida Retirement System. Actuarial Valuations for the FRS DBP and HIS with respect to GASB Statement No. 67 Disclosures for the fiscal year ended June 30, 2016.	FRS, DBP, HIS
Teachers' Retirement System of Montana	2015	Cavanaugh Macdonald Consulting	An actuarial audit of the July 1, 2014 actuarial valuation of the Teachers' Retirement System of Montana (MTRS).	Teachers' Retirement System of Montana
Tennessee Valley Authority	2015	Mercer	Actuarial review of the Actuarial Valuation Report of the	Tennessee Valley Authority
Municipal Fire & Police Retirement System of Iowa	2015	SilverStone Group	Actuarial Audit of the July 1, 2014 Actuarial Valuation of the Municipal Fire & Police Retirement System of Iowa (MFPRSI).	Municipal Fire & Police Retirement System of Iowa
Iowa Public Employees' Retirement System	2015	Cavanaugh Macdonald Consulting	An Audit of the June 30, 2014 Actuarial Valuation of the Iowa Public Employees' Retirement System (IPERS).	Iowa Public Employees' Retirement System
New York State Teachers Retirement System	2015	Office of the Actuary and the Internal Audit Department at the NYSTRS	A report of an actuarial audit of the June 30, 2013, Actuarial Valuation of the New York State Teachers' Retirement System (NYSTRS) and a report of an actuarial audit of the July 1, 2013, Actuarial Valuation of the Post-Retirement Medical Plan for the New York State Teachers' Retirement System ("NYSTRS").	Actuarial & OPEB Audit of the New York State Teachers' Retirement System
City of Corpus Christi	2014	Rudd & Wisdom	Actuarial Audit Report in Accordance with Section 802.1012(h) of the Texas Government Code of the December 31, 2012 actuarial valuation of the Corpus Christi Fire Fighters' Retirement System (CCFFRS).	Corpus Christi Fire Fighters' Retirement System (CCFFRS)
City of Irving	2014	John Crider (a sole proprietor)	Actuarial Audit Report in Accordance with Section 802.1012(h) of the Texas Government Code of the January 1, 2012 actuarial valuation of the Irving Firemen's Relief and Retirement Fund (IFRRF).	Irving Firemen's Relief and Retirement Fund (IFRRF)

GRS Audit Client List

Client Name	Year of Audit	Firm Audited	Scope of Audit	Plans in Audit
Public Employee Retirement System of Idaho	2014	Milliman	Annual review of the annual actuarial valuations and experience study work regarding the July 1, 2013 actuarial valuation results and the actuarial assumptions and methods recommended in the 2010 and 2012 experience studies.	Public Employee Retirement System of Idaho (PERSI)
Arizona State Retirement System	2014	Buck Consultants	Actuarial audit of the June 30, 2013 actuarial valuations of the Arizona State Retirement System (ASRS) retirement	Arizona State Retirement System
Dallas Area Rapid Transit DB Plan	2014	Buck Consultants	An actuarial audit of the October 1, 2013 Actuarial Valuation of the DART Employees' Defined Benefit Retirement Plan.	DART DB Plan
Austin Police Retirement System	2014	Foster and Foster	Actuarial audit of the December 31, 2012 Actuarial Valuation of the Austin Police Retirement System (APRS).	Austin Police Retirement System (APRS)
Austin Fire Fighters Relief and Retirement Fund	2014	Foster and Foster	Actuarial audit of the December 31, 2011 Actuarial Valuation of the Austin Fire Fighters Relief and Retirement Fund (AFRRF).	Austin Fire Fighters Relief and Retirement Fund (AFRRF)
Virginia Retirement System	2014	Cavanaugh Macdonald Consulting	In 2014, GRS performed a Quadrennial actuarial audit of the Virginia Retirement System. The audit consisted of a non-replication actuarial audit as of June 30, 2013 actuarial valuations and June 30, 2012 experience study. The scope of the audit also included a review of the three Other Post Employment Benefit (OPEB) plans that are administered and maintained by the Retirement System.	VA JLARC (combined Pension & OPEB)
Lower Colorado River Authority (LCRA)	2013	Rudd & Wisdom	Actuarial audit of the April 1, 2012 Actuarial Valuation of the LCRA Retirement Plan.	LCRA Retirement Plan
City of Lubbock	2013	John Crider, Jr (Sole Proprietor)	An actuarial audit of the December 31, 2010 Actuarial Valuation of the Lubbock Fire Pension Fund (LFPP).	City of Lubbock Fire Pension Fund

GRS Audit Work

Client Name	Year of Audit	Firm Audited	Scope of Audit	Plans in Audit
Commonwealth of Virginia Joint Legislative Audit and Review Commission (JLARC)	2013	Milliman	2013 Quadrennial Actuarial Audit of the Virginia529 prepaid Program (formerly known as the Virginia Prepaid Education Program. The audit consisted of a non-replication actuarial audit of the June 30, 2012, actuarial soundness valuation of the prepaid program.	Virginia529 PrePaid Program
Florida Retirement System (FRS)	2013	Milliman	Annual actuarial replication audit of FRS.	Florida Retirement System
Alaska Retirement Management Board	2013	Buck Consultants	Actuarial Review of June 30, 2012 Defined Contribution Retirement (DCR) Plan valuations for the State of Alaska Public Employees' Tier IV (PERS) and Teachers' Tier III (TRS)	Alaska Retirement Management Board
San Antonio Fire and Police Pension Fund	2013	Segal Company	Actuarial audit of the October 1, 2012 Actuarial Valuation of the Fire and Police Pension Fund, San Antonio (SAFPPF).	San Antonio Fire and Police Pension Fund

APPENDIX C

GRS STATEWIDE CLIENT LIST

GRS Statewide Client List

System and Contact	Plan Structure and Number of Agent Employers	Year Retained	Assets (in billions)	Actives	Retired
Arizona State Retirement System Mr. Paul Matson, Executive Director 3300 N. Central Avenue Phoenix, AZ 85012 (602) 240-2031	Cost-Sharing Multiple-Employer	2016	47	210,000	159,000
Arkansas Local Police and Fire Retirement System Mr. David Clark, Executive Director 620 W. 3rd, Suite 200 Little Rock, AR 72201-2212 (501) 682-1749	Cost-Sharing Multiple-Employer	1981	2.8	6,800	3,800
Arkansas Public Employees Retirement System Ms. Amy Fecher, Executive Director One Union National Plaza, 124 West Capitol Ave., Suite 400 Little Rock, AR 72201 (501) 682-7854	Cost-Sharing Multiple-Employer	1962	9.7	44,000	40,000
Arkansas Teacher Retirement System Mr. Clint Rhoden, Executive Director 1400 West Third Street Little Rock, AR 72201 (501) 682-1820	Cost-Sharing Multiple-Employer	1956	19.0	71,000	52,000
Colorado Fire and Police Pension Association (FPPA) Ms. Ahni Smith, Chief Operations Officer 5290 DTC Parkway, Suite 100 Greenwood Village, CO 80111 (303) 770-3772	Agent Multiple-Employer	2004	5.5	15,800	9,900

GRS Statewide Client List

System and Contact	Plan Structure and Number of Agent Employers	Year Retained	Assets (in billions)	Actives	Retired
Employees' Retirement System of Rhode Island Mr. Frank Karpinski, Executive Director 50 Service Avenue Warwick, RI 02886 (401) 462-7610	Cost-Sharing and Agent Multiple-Employer Plans	2001	8.4	32,000	27,000
Illinois Municipal Retirement Fund Mr. Brian Collins Executive Director 2211 York Road, Suite 500 Oak Brook, IL 60523-2337 (630) 368-5355	Agent Multiple-Employer	1992	57.0	172,000	215,000
Illinois State Employees Retirement System Mr. Tim Blair, Executive Secretary 2101 S. Veterans Parkway Springfield, IL 62704-9255 (217) 785-7015	Single-Employer	2001	23.8	62,000	75,900
Kentucky Public Pensions Authority Mr. David Eager, Executive Director Perimeter Park West, 1260 Louisville Road Frankfort, KY 40601 (502)696-8455	Cost-Sharing Multiple-Employer	2017	23.5	121,000	132,000
Maryland State Retirement and Pension Agency Mr. Martin Noven, Executive Director 120 East Baltimore Street Baltimore, MD 21202-6700 (410) 625-5600	Cost-Sharing Multiple-Employer	2008	64.0	195,000	172,000
Michigan Public School Employees Anthony Estell, Director, 530 W. Allegan Lansing, MI 48933 (517) 322-1145	Cost-Sharing Multiple-Employer	2006	51.4	165,000	221,000

GRS Statewide Client List

System and Contact	Plan Structure and Number of Agent Employers	Year Retained	Assets (in billions)	Actives	Retired
Michigan State Employee Retirement System Mr. Anthony Estell, Director, 530 W. Allegan Lansing, MI 48933 (517) 322-1145	Single-Employer	2006	14.0	5,400	60,000
Minnesota State Employees Retirement System Ms. Erin Leonard, Executive Director 60 Empire Drive, Suite 300 St. Paul, MN 55103-3000 (651) 284-7848	Cost-Sharing Multiple-Employer	2012	20.0	56,000	51,000
Missouri Dept. of Transportation and Highway Patrol Employees' Retirement System Mr. Scott Simon, Executive Director 1913 William Street, P.O. Box 1930 Jefferson City, MO 65102-1930 800-270-1271	Cost-Sharing Multiple-Employer	1999	3.0	6,800	9,400
Missouri Local Government Employees Retirement System Mr. Bill Betts, Executive Secretary PO Box 1665 Jefferson City, MO 65102 (573) 636-9455	Agent Multiple-Employer	1967	8.1	35,380	26,421
Municipal Employees Retirement System of Michigan Ms. Kerrie Vanden Bosch, Chief Executive Office 1134 Municipal Way Lansing, MI 48917 (507) 703-9030	Agent Multiple Employer	2017	11.0	32,000	44,000

GRS Statewide Client List

System and Contact	Plan Structure and Number of Agent Employers	Year Retained	Assets (in billions)	Actives	Retired
New Hampshire Retirement System Ms. Jan Goodwin, Executive Director 54 Regional Drive Concord, NH 03301 (603) 410-3520	Cost-Sharing Multiple-Employer	2006	11.0	48,000	41,000
New Mexico Educational Retirement Board Mr. David Archuleta, Executive Director 701 Camino de Los Marquez Santa Fe, NM 87505-1826 (505) 476-6118	Cost-Sharing Multiple-Employer	2001	16.3	49,000	53,000
New Mexico Public Employees Retirement Association Mr. Greg Trujillo, Executive Director 33 Plaza La Prensa Santa Fe, NM 87507 (505) 476-9303	Cost Sharing Multiple Employer	2022	16.5	48000	43000
North Dakota Public Employees Retirement System Mr. Scott Miller, Executive Director 1600 East Centure Avenue, Suite 2 Bismarck, ND 58502-1657 (701) 328-3900	Cost-Sharing Multiple-Employer	2016	3.1	25,000	13,000
Ohio Public Employees Retirement System Ms. Karen Carraher, Executive Director 277 E Town St Columbus, OH 43215-4642 (614) 227-0011	Cost-Sharing Multiple-Employer	1954	110.0	281,000	226,000
Oklahoma Teachers' Retirement System Ms. Sarah Green, Executive Director PO Box 53524 2500 North Lincoln Blvd. Oklahoma City, OK 73152 (405) 521-4745	Cost-Sharing Multiple-Employer	2001	22.0	90,000	67,000

GRS Statewide Client List

System and Contact	Plan Structure and Number of Agent Employers	Year Retained	Assets (in billions)	Actives	Retired
Public Employees Retirement Association of Minnesota Mr. Doug Anderson, Executive Director 60 Empire Dr., Suite 200 St. Paul, MN 55103 (651) 201-2690	Cost-Sharing Multiple-Employer	2012	37.0	165,000	129,000
South Carolina Retirement System Ms. Peggy Boykin, Director PO Box 11960 Columbia, SC 29211-1960 (803)-734-8117	Cost-Sharing Multiple-Employer	2011	33.0	199,000	148,000
State of Hawaii Employees' Retirement System Mr. Thomas Williams, Executive Director City Financial Tower 201 Merchant Street, Suite 1400 Honolulu, HI 96813-2980 (808) 587-5381	Cost-Sharing Multiple-Employer	2001	16.6	66,000	48,600
State Universities Retirement System of Illinois Ms. Suzanne Mayer, Executive Director 1901 Fox Drive Champaign, IL 61820 (217) 378-8800	Cost-Sharing Multiple-Employer	1996	22.0	60,000	31,000
Texas Employees Retirement System Ms. Catherine Terrell, Deputy Executive Director 200 E. 18th Street Austin, TX 78701 (512) 867-7238	Single-Employer	2013	28.0	142,000	118,000
Texas Municipal Retirement System Mr. David Wescoe, Executive Director 1200 N. IH35, PO Box 149153 Austin, TX 78714-9153 (512) 225-3701	Agent Multiple-Employer	2008	38.0	116,000	77,000

GRS Statewide Client List

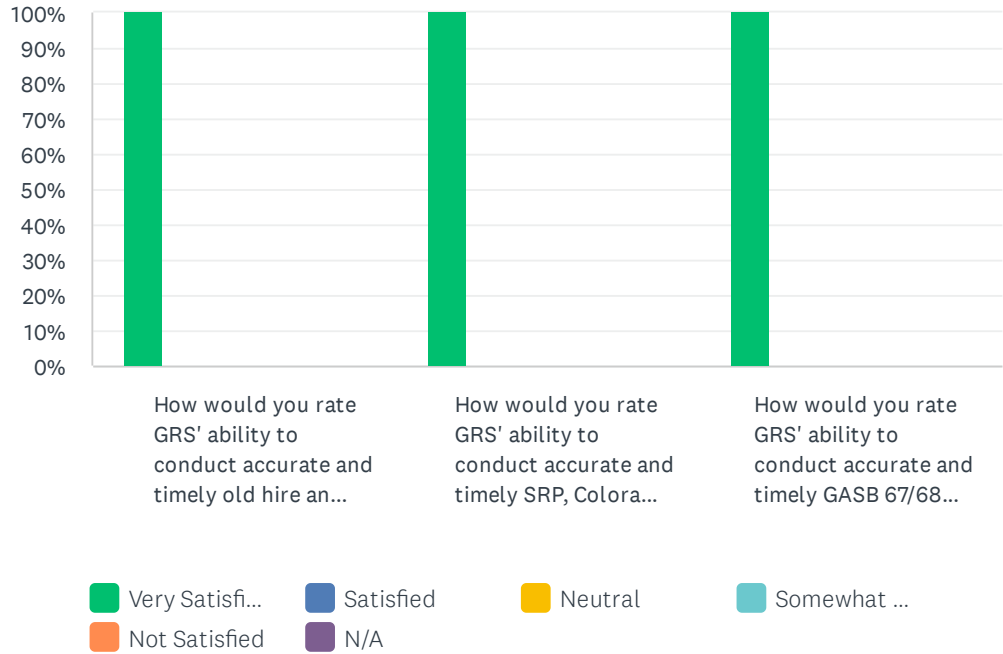
System and Contact	Plan Structure and Number of Agent Employers	Year Retained	Assets (in billions)	Actives	Retired
Texas Teacher Retirement System Mr. Brian Guthrie, Executive Director 1000 Red River Street Austin, TX 78701 (512) 542-6411	Cost-Sharing Multiple- Employer	2001	202.0	918,000	458,000
Utah Retirement System Mr. Daniel D. Andersen, Executive Director 540 East 200 South Salt Lake City, UT 84102-2099 (801) 366-7343	Cost-Sharing Multiple- Employer	2001	38.0	98,000	73,000
Virginia Retirement System Ms. Patricia Bishop, Director 1200 East Main Street Richmond, VA 23219 1-(888) 827-3847, ext. 7332	Agent Multiple Employer	2022	79.0	235000	291000
Wisconsin Retirement System Ms. Cindy Klimke, Chief Trust Financial Officer, 4822 Madison Yards Way Madison, WI 53705 (608) 267-0745	Cost-Sharing Multiple- Employer	1976	112.0	258,000	222,000
Wyoming Retirement System Mr. David Swindell, Executive Director 6101 Yellowstone Road Suite 500 Cheyenne, WY 82002 (307) 777-6109	Cost-Sharing Multiple- Employer	2009	8.0	29,000	35,000

APPENDIX D

CLIENT SATISFACTION SURVEY

Q1 Actuarial Valuations

Answered: 6 Skipped: 0

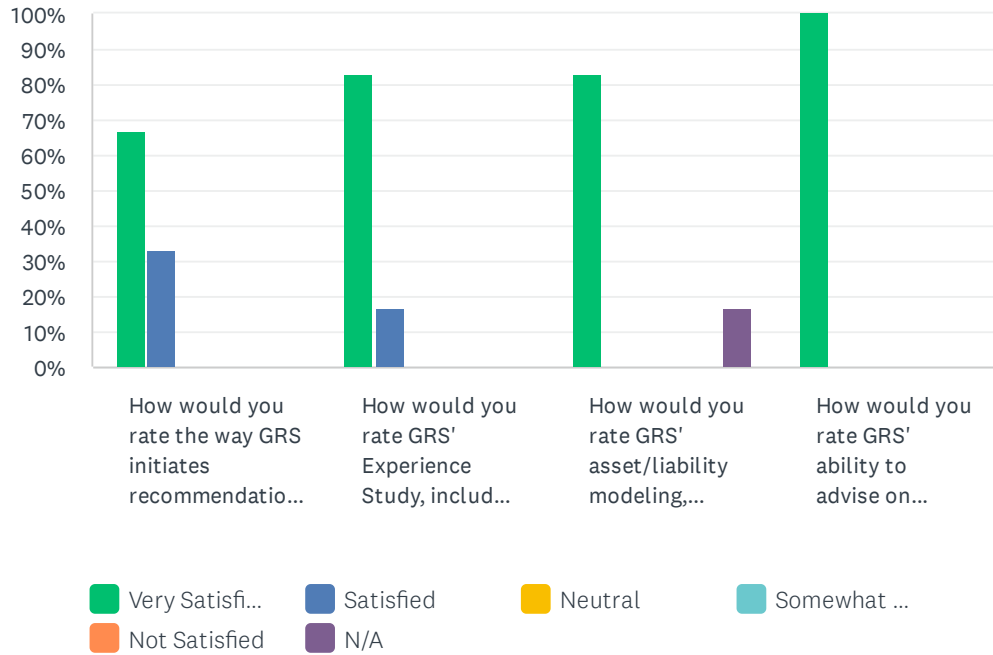


	VERY SATISFIED	SATISFIED	NEUTRAL	SOMEWHAT SATISFIED	NOT SATISFIED	N/A	TOTAL	WEIGHTED AVERAGE
How would you rate GRS' ability to conduct accurate and timely old hire and volunteer actuarial valuations, including supplemental studies (old hire valuations completed on the even years and volunteer valuations completed on the odd years)?	100.00% 6	0.00% 0	0.00% 0	0.00% 0	0.00% 0	0.00% 0	6	5.00
How would you rate GRS' ability to conduct accurate and timely SRP, Colorado Springs New Hire Fire/Police, and SWDD actuarial valuations, including supplemental studies (completed annually)?	100.00% 6	0.00% 0	0.00% 0	0.00% 0	0.00% 0	0.00% 0	6	5.00
How would you rate GRS' ability to conduct accurate and timely GASB 67/68 reporting for cost-sharing plans (SRP and Colorado Springs New Hire Fire/Police) and agent-multiple plans (old hire and volunteer) as well as GASB 74 reporting for the SWDD plan?	100.00% 6	0.00% 0	0.00% 0	0.00% 0	0.00% 0	0.00% 0	6	5.00

#	COMMENTS FOR "HOW WOULD YOU RATE GRS' ABILITY TO CONDUCT ACCURATE AND TIMELY OLD HIRE AND VOLUNTEER ACTUARIAL VALUATIONS, INCLUDING SUPPLEMENTAL STUDIES (OLD HIRE VALUATIONS COMPLETED ON THE EVEN YEARS AND VOLUNTEER VALUATIONS COMPLETED ON THE ODD YEARS)?"	DATE
1	Also ask great follow up questions for employers with big data changes.	12/20/2023 4:25 PM
#	COMMENTS FOR "HOW WOULD YOU RATE GRS' ABILITY TO CONDUCT ACCURATE AND TIMELY SRP, COLORADO SPRINGS NEW HIRE FIRE/POLICE, AND SWDD ACTUARIAL VALUATIONS, INCLUDING SUPPLEMENTAL STUDIES (COMPLETED ANNUALLY)?"	DATE
	There are no responses.	
#	COMMENTS FOR "HOW WOULD YOU RATE GRS' ABILITY TO CONDUCT ACCURATE AND TIMELY GASB 67/68 REPORTING FOR COST-SHARING PLANS (SRP AND COLORADO SPRINGS NEW HIRE FIRE/POLICE) AND AGENT-MULTIPLE PLANS (OLD HIRE AND VOLUNTEER) AS WELL AS GASB 74 REPORTING FOR THE SWDD PLAN?"	DATE
	There are no responses.	

Q2 Actuarial Assumptions

Answered: 6 Skipped: 0

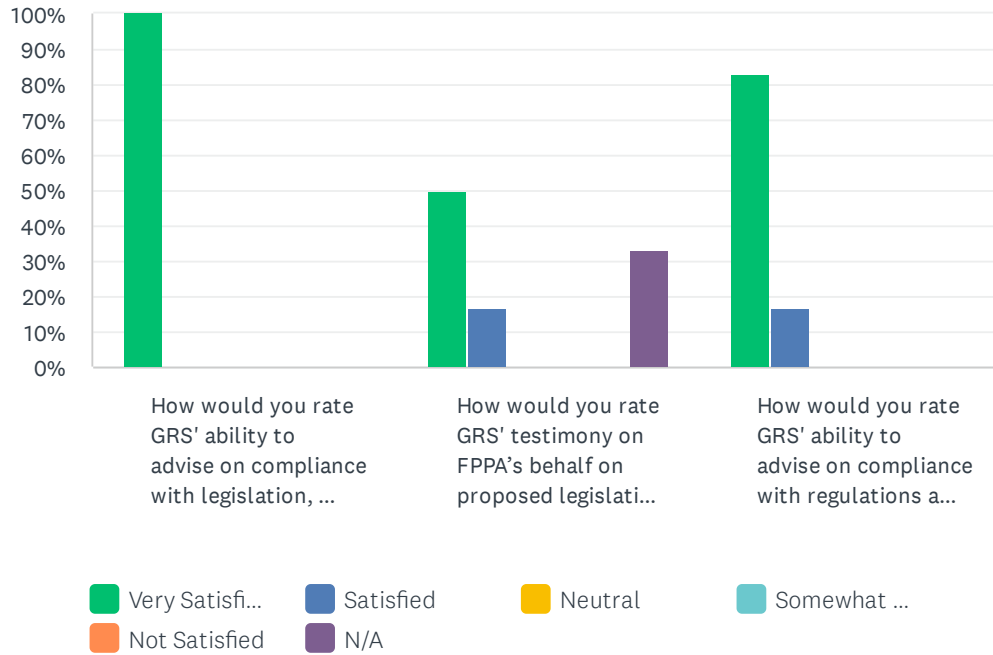


	VERY SATISFIED	SATISFIED	NEUTRAL	SOMEWHAT SATISFIED	NOT SATISFIED	N/A	TOTAL	WEIGHTED AVERAGE
How would you rate the way GRS initiates recommendations for assumption or method changes that better measure FPPA's expected future experience and reflect past experience?	66.67% 4	33.33% 2	0.00% 0	0.00% 0	0.00% 0	0.00% 0	6	4.67
How would you rate GRS' Experience Study, including timeliness and presentation of actuarial assumption changes/recommendations?	83.33% 5	16.67% 1	0.00% 0	0.00% 0	0.00% 0	0.00% 0	6	4.83
How would you rate GRS' asset/liability modeling, including the projection software tools and assistance provided to FPPA staff to model scenarios for economic changes, benefit changes, etc.?	83.33% 5	0.00% 0	0.00% 0	0.00% 0	0.00% 0	16.67% 1	6	5.00
How would you rate GRS' ability to advise on liability issues?	100.00% 6	0.00% 0	0.00% 0	0.00% 0	0.00% 0	0.00% 0	6	5.00

#	COMMENTS FOR "HOW WOULD YOU RATE THE WAY GRS INITIATES RECOMMENDATIONS FOR ASSUMPTION OR METHOD CHANGES THAT BETTER MEASURE FPPA'S EXPECTED FUTURE EXPERIENCE AND REFLECT PAST EXPERIENCE?"	DATE
1	I think the recommendations they make are done with a lot of thought, preparation, and consultation.	12/21/2023 5:48 PM
#	COMMENTS FOR "HOW WOULD YOU RATE GRS' EXPERIENCE STUDY, INCLUDING TIMELINESS AND PRESENTATION OF ACTUARIAL ASSUMPTION CHANGES/RECOMMENDATIONS?"	DATE
1	Rating based on inclusion for 2023 and follow up discussion on the impact to the results	12/20/2023 4:25 PM
#	COMMENTS FOR "HOW WOULD YOU RATE GRS' ASSET/LIABILITY MODELING, INCLUDING THE PROJECTION SOFTWARE TOOLS AND ASSISTANCE PROVIDED TO FPPA STAFF TO MODEL SCENARIOS FOR ECONOMIC CHANGES, BENEFIT CHANGES, ETC.? "	DATE
	There are no responses.	
#	COMMENTS FOR "HOW WOULD YOU RATE GRS' ABILITY TO ADVISE ON LIABILITY ISSUES?"	DATE
	There are no responses.	

Q3 Legislation and FPPA Rules & Regulations

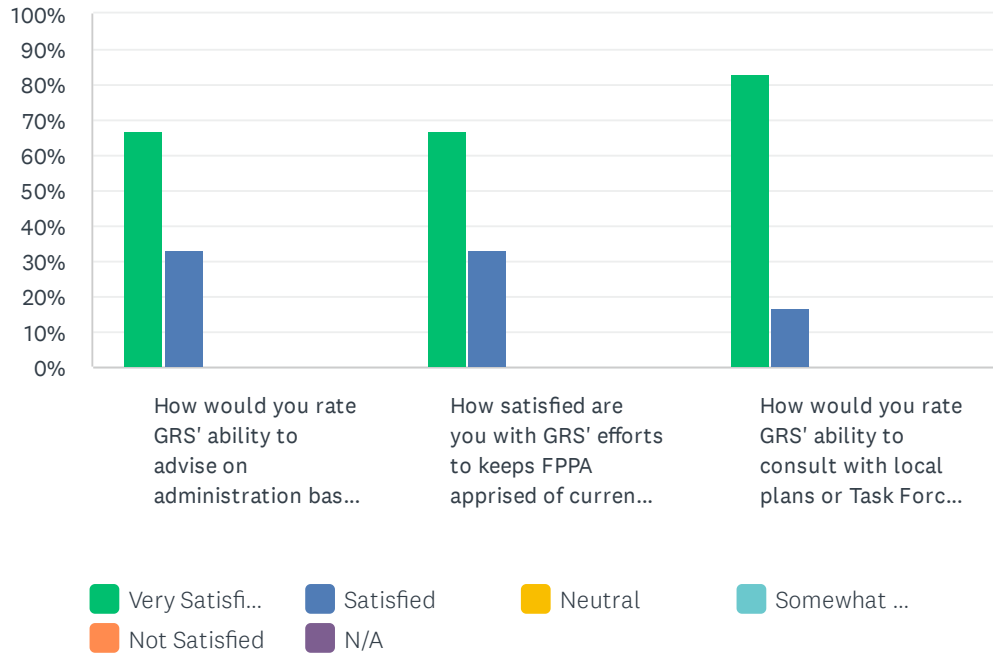
Answered: 6 Skipped: 0



	VERY SATISFIED	SATISFIED	NEUTRAL	SOMEWHAT SATISFIED	NOT SATISFIED	N/A	TOTAL	WEIGHTED AVERAGE
How would you rate GRS' ability to advise on compliance with legislation, and analyze the actuarial impact on proposed legislative amendments?	100.00% 6	0.00% 0	0.00% 0	0.00% 0	0.00% 0	0.00% 0	6	5.00
How would you rate GRS' testimony on FPPA's behalf on proposed legislation and/or actuarial education to the legislatures?	50.00% 3	16.67% 1	0.00% 0	0.00% 0	0.00% 0	33.33% 2	6	4.75
How would you rate GRS' ability to advise on compliance with regulations and analyze the actuarial impact of proposed FPPA Rules & Regulations?	83.33% 5	16.67% 1	0.00% 0	0.00% 0	0.00% 0	0.00% 0	6	4.83

Q4 Consulting and support services to FPPA staff

Answered: 6 Skipped: 0



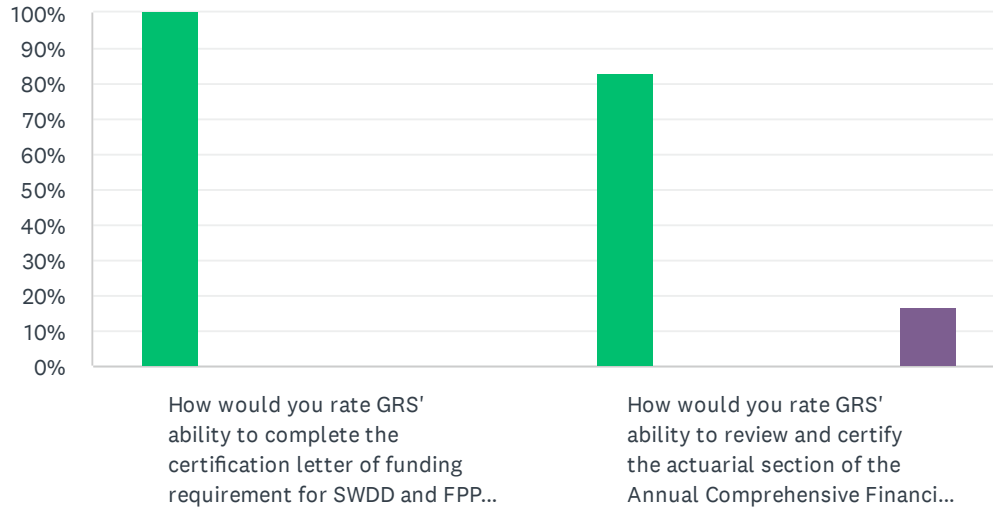
	VERY SATISFIED	SATISFIED	NEUTRAL	SOMEWHAT SATISFIED	NOT SATISFIED	N/A	TOTAL	WEIGHTED AVERAGE
How would you rate GRS' ability to advise on administration based on experience with other public funds including technical support regarding IRC, plan qualification issues, Government Accounting Standards Board Statements, Section 415 limits and non-discrimination concerns?	66.67% 4	33.33% 2	0.00% 0	0.00% 0	0.00% 0	0.00% 0	6	4.67
How satisfied are you with GRS' efforts to keeps FPPA apprised of current trends in public plans?	66.67% 4	33.33% 2	0.00% 0	0.00% 0	0.00% 0	0.00% 0	6	4.67
How would you rate GRS' ability to consult with local plans or Task Forces on actuarial valuations or other issues, including testifying at meetings?	83.33% 5	16.67% 1	0.00% 0	0.00% 0	0.00% 0	0.00% 0	6	4.83

#	COMMENTS FOR "HOW WOULD YOU RATE GRS' ABILITY TO ADVISE ON ADMINISTRATION BASED ON	DATE
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	<p>EXPERIENCE WITH OTHER PUBLIC FUNDS INCLUDING TECHNICAL SUPPORT REGARDING IRC, PLAN QUALIFICATION ISSUES, GOVERNMENT ACCOUNTING STANDARDS BOARD STATEMENTS, SECTION 415 LIMITS AND NON-DISCRIMINATION CONCERNS?"</p>	
<p>There are no responses.</p>		
<p>#</p>	<p>COMMENTS FOR "HOW SATISFIED ARE YOU WITH GRS' EFFORTS TO KEEPS FPPA APPRISED OF CURRENT TRENDS IN PUBLIC PLANS?"</p>	<p>DATE</p>
<p>There are no responses.</p>		
<p>#</p>	<p>COMMENTS FOR "HOW WOULD YOU RATE GRS' ABILITY TO CONSULT WITH LOCAL PLANS OR TASK FORCES ON ACTUARIAL VALUATIONS OR OTHER ISSUES, INCLUDING TESTIFYING AT MEETINGS?"</p>	<p>DATE</p>
<p>1</p>	<p>They are able to explain and consult in plain language terms with illustrations that make it easier to remember and understand the issues they are presenting on. For example, Dana used an analogy of climbing a 14'er to explain funding for COLAs and the "journey" this is and the impact different COLAs can have on that "journey".</p>	<p>12/21/2023 5:48 PM</p>
<p>2</p>	<p>Ability to turn the response to actual English is awesome.</p>	<p>12/20/2023 4:25 PM</p>

Q5 Certification

Answered: 6 Skipped: 0

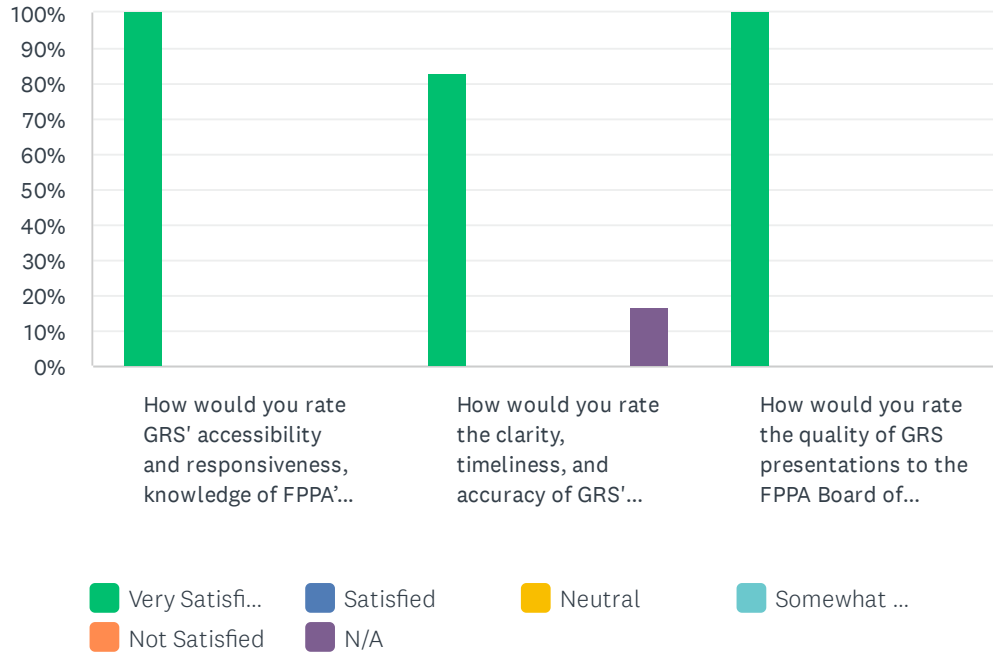


■ Very Satisfi...
 ■ Satisfied
 ■ Neutral
 ■ Somewhat ...
■ Not Satisfied
 ■ N/A

	VERY SATISFIED	SATISFIED	NEUTRAL	SOMEWHAT SATISFIED	NOT SATISFIED	N/A	TOTAL	WEIGHTED AVERAGE
How would you rate GRS' ability to complete the certification letter of funding requirement for SWDD and FPPA Defined Benefit System Plans to the FPPA Board (annual process)?	100.00% 6	0.00% 0	0.00% 0	0.00% 0	0.00% 0	0.00% 0	6	5.00
How would you rate GRS' ability to review and certify the actuarial section of the Annual Comprehensive Financial Report (ACFR)?	83.33% 5	0.00% 0	0.00% 0	0.00% 0	0.00% 0	16.67% 1	6	5.00

Q6 Client Service

Answered: 6 Skipped: 0



	VERY SATISFIED	SATISFIED	NEUTRAL	SOMEWHAT SATISFIED	NOT SATISFIED	N/A	TOTAL	WEIGHTED AVERAGE
How would you rate GRS' accessibility and responsiveness, knowledge of FPPA's account, and overall communication?	100.00% 6	0.00% 0	0.00% 0	0.00% 0	0.00% 0	0.00% 0	6	5.00
How would you rate the clarity, timeliness, and accuracy of GRS' invoices?	83.33% 5	0.00% 0	0.00% 0	0.00% 0	0.00% 0	16.67% 1	6	5.00
How would you rate the quality of GRS presentations to the FPPA Board of Directors?	100.00% 6	0.00% 0	0.00% 0	0.00% 0	0.00% 0	0.00% 0	6	5.00

#	COMMENTS FOR "HOW WOULD YOU RATE GRS' ACCESSIBILITY AND RESPONSIVENESS, KNOWLEDGE OF FPPA'S ACCOUNT, AND OVERALL COMMUNICATION?"	DATE
1	Dana is very responsive to our requests. We've had to make changes to our spreadsheets used for reentries, affiliations, and our on-site meetings. She is always very receptive to questions, comments, and changes we ask for with these spreadsheets. She is quick to respond and make changes.	12/21/2023 5:48 PM

2	They are always available for questions and discussion.	12/20/2023 4:25 PM
#	COMMENTS FOR "HOW WOULD YOU RATE THE CLARITY, TIMELINESS, AND ACCURACY OF GRS' INVOICES?"	DATE
	There are no responses.	
#	COMMENTS FOR "HOW WOULD YOU RATE THE QUALITY OF GRS PRESENTATIONS TO THE FPPA BOARD OF DIRECTORS?"	DATE
1	The presentations I've seen have been excellent. Joe and Dana have presented their views, experiences with other public plans, etc. that I believe have helped the Board understand the information and make informed decisions.	12/21/2023 5:48 PM

Q7 Overall Rating

Answered: 6 Skipped: 0



Overall, how would you rate GRS' services over the past year?

■ Very Satisfi...
 ■ Satisfied
 ■ Neutral
 ■ Somewhat ...
 ■ Not Satisfied
 ■ N/A

	VERY SATISFIED	SATISFIED	NEUTRAL	SOMEWHAT SATISFIED	NOT SATISFIED	N/A	TOTAL	WEIGHTED AVERAGE
Overall, how would you rate GRS' services over the past year?	100.00% 6	0.00% 0	0.00% 0	0.00% 0	0.00% 0	0.00% 0	6	5.00

Q8 Do you have any additional comments?

Answered: 1 Skipped: 5

#	RESPONSES	DATE
1	We're very lucky to have Dana and Joe!	12/21/2023 10:43 AM

APPENDIX E

GRS SAMPLE ACTUARIAL AUDIT REPORT

(In addition to the links provided in the reference section)

Oklahoma Public Employees Retirement System

Actuarial Audit of the July 1, 2021 Oklahoma Public
Employees Retirement System (OPERS) and Uniform
Retirement System for Justices and Judges (URSJJ)
Actuarial Valuations





August 2, 2022

Board of Trustees
Oklahoma Public Employees Retirement System
5400 N Grand Boulevard, Suite 400
P.O. Box 53007
Oklahoma City, OK 73112-5625

Members of the Board:

Gabriel, Roeder, Smith & Company (GRS) is pleased to present this report of an actuarial audit of the July 1, 2021 Actuarial Valuation of the Oklahoma Public Employees Retirement System (OPERS) and Uniform Retirement System for Justices and Judges (URSJJ). We are grateful to the OPERS staff, and Cavanaugh Macdonald, the retained actuary, for their cooperation throughout the actuarial audit process.

This actuarial audit involves an independent verification and analysis of the assumptions, procedures, methods, and conclusions used by the retained actuary for OPERS, in the valuation of OPERS and URSJJ as of July 1, 2021, to ensure that the conclusions are technically sound and conform to the appropriate Standards of Practice as promulgated by the Actuarial Standards Board.

GRS is pleased to report to the OPERS Board and Staff that, in our professional opinion, the July 1, 2021 Actuarial Valuations prepared by the retained actuary provides a fair and reasonable assessment of the financial position of OPERS and URSJJ given current legislated funding policies and practices.

Mr. Newton and Ms. Woolfrey are Members of the American Academy of Actuaries and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained herein.

Thank you for the opportunity to work on this assignment.

Respectfully submitted,
Gabriel, Roeder, Smith & Company

A handwritten signature in black ink, appearing to read "J. Newton".

Joseph Newton, FSA, FCA, MAAA, EA
Pension Market Leader

A handwritten signature in black ink, appearing to read "Dana Woolfrey".

Dana Woolfrey, FSA, FCA, MAAA, EA
Senior Consultant

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SECTION I

EXECUTIVE SUMMARY

Executive Summary

The Oklahoma Public Employees Retirement System (OPERS) engaged Gabriel, Roeder, Smith & Company (GRS) for an actuarial audit of the 2021 actuarial valuations prepared for OPERS.

The purpose of this report is to:

- Provide an evaluation and express an opinion regarding the reasonableness and accuracy of the valuation results (including a determination of actuarial accrued liability, normal cost, and actuarially determined contributions), appropriateness of the actuarial assumptions, and application of the actuarial cost method for the 2021 actuarial valuations; and
- Include any recommendations regarding reasonable alternatives to the actuarial assumptions used in the 2021 actuarial valuations.

The scope of this actuarial audit includes the following:

- Analyze the appropriateness of the actuarial assumptions;
- Review the actuarial assumptions and methodology for compliance with generally recognized and accepted actuarial principles and practices which are consistent with Actuarial Standards of Practice, the Code of Professional Conduct, and the Qualifications Standards for Public Statements of Actuarial Opinion of the American Academy of Actuaries;
- Evaluate the data used for performance of the 2021 actuarial valuations, the degree to which the data is sufficient to support the conclusions of the 2021 actuarial valuations, and the use and appropriateness of any assumptions made regarding the data;
- Conduct a replication of the valuation results using the same data, methods, and assumptions used by the retained actuary in the 2021 actuarial valuations; and
- Assess whether the 2021 actuarial valuations appropriately reflect information pursuant to Actuarial Standards of Practice.

Summary of our Review

Based on our review of the census data, experience study documents, liability replications, and actuarial valuation reports, we believe the 2021 actuarial valuations for OPERS are reasonable for the purpose of determining the sufficiency of the current contribution rates, based on reasonable assumptions and methods, and the reports generally comply with the Actuarial Standards of Practice.

The technical portion of the audit or the replication was clean with limited findings. The Total Present Value of Future Benefits is generally considered the primary actuarial result for replication purposes. GRS was able to match this result within 0.0% for OPERS (an extremely close match), and to within 2% for URSJJ (a reasonable match). The source of the 2% difference for URSJJ was identified, giving us confidence that the projected benefits were fully replicated.

GRS has identified the following items for the Board, the retained actuary and Staff for the upcoming valuation and experience study which we believe will further improve the reliability of your valuation results in future years:



Recommended changes to assumptions and methods as part of the upcoming experience study:

- We find there to be a high likelihood that the mortality assumption will require further strengthening in the future, and we find that use of a static mortality table is not consistent with best or common practice. We recommend that the Board adopt a generational mortality approach that is likely to serve them better over the long term. We suggest that the next experience study provide a broader support for use of below-median mortality rates, and we suggest using a base table that is more reflective of the income and education of the Judges population for the URSJJ valuation.
- We recommend that the Board give consideration to using differing amortization periods depending on whether the plan is in an unfunded or surplus position. This will reduce volatility in the actuarial contribution requirement and not give the perception of a low ongoing cost of the plan in cases of surplus.

Technical findings for upcoming valuation as of July 1, 2022:

- Update the mortality rates used in the URSJJ valuation to reflect the projected mortality improvements as they are stated in the valuation and experience study. We anticipate this will increase the plan liabilities by about two percent.
- We recommend that an assumption be made for elected class retirees without an optional form listed in the census data to account for the automatic joint and survivor benefits that are payable to this group.

Possible action for staff regarding recordkeeping:

- We suggest staff work to revise their recordkeeping practices regarding terminated vested members to be able to provide data on all terminated vested member records regardless of whether or not they have submitted paperwork with the system associated with their termination.

SECTION II

GENERAL ACTUARIAL AUDIT PROCEDURE

General Actuarial Audit Procedure

GRS received and reviewed the following items:

- 2021 actuarial valuation reports for OPERS and URSJJ;
- Experience Study for the three-year period ending June 30, 2019;
- A preliminary set of census data for plan participants and beneficiaries as of July 1, 2021 originally provided by OPERS to the retained actuary for the actuarial valuations; and
- A final set of census data for plan participants and beneficiaries as of July 1, 2020 and July 1, 2021 used by the retained actuary for the actuarial valuations.

In performing our review, we:

- Reviewed descriptions of member benefits and applicable statutes to understand the benefits provided by OPERS and URSJJ;
- Reviewed the appropriateness of the actuarial assumptions and methods;
- Reviewed actuarial valuation reports; and
- Replicated the actuarial valuation results, including the determination of actuarial accrued liability, normal cost, and actuarially determined contributions.

The actuarial audit observations, which follow, are based on our review of this information and subsequent correspondence with the retained actuary for clarification and further documentation.

Key Actuarial Concepts

An actuarial valuation is a detailed statistical simulation of the future operation of a retirement system using the set of actuarial assumptions adopted by the governing board. It is designed to simulate all of the dynamics of such a retirement system for each current participant of the plan, including:

- Accrual of future service,
- Changes in benefits,
- Leaving the plan through retirement, disability, withdrawal, or death, and
- Determination of and payment of benefits from the plan.

This simulated dynamic is applied to each active member in the plan and results in a set of expected future benefit payments for that member. Discounting those future payments for the likelihood of survival at the assumed rate of investment return produces the Total Present Value of Plan Benefits (TPV) for that participant. The actuarial cost method will allocate this TPV between the participant's past service (actuarial accrued liability) and future service (future normal costs).

We believe that an actuarial audit should not focus on finding differences in actuarial processes and procedures utilized by the consulting actuary and the auditing actuary. Rather, our intent is to identify and suggest improvements to the process and procedures utilized by the retained actuary for OPERS. In performing this actuarial audit, we attempted to limit our discussions regarding opinion differences and focus our attention on the accuracy of the calculations of the liability and costs, completeness and reliability of reporting, and compliance with the Actuarial Standards of Practice that apply to the work performed by the retained actuary.

These key actuarial concepts will be discussed in more detail throughout this report.

Actuarial Qualifications

The actuarial valuation reports were signed by Alisa Bennett, FSA, EA, FCA, MAAA and Brent Banister Ph.D., FSA, EA, FCA, MAAA. Based on the information provided by the online actuarial directory sponsored by the Society of Actuaries, Ms. Bennett and Mr. Banister have attained the actuarial credentials noted on the signature line of the actuarial valuation report and are compliant with the Society of Actuaries Continuing Professional Development requirement.

SECTION III

ACTUARIAL ASSUMPTIONS AND METHODS

Actuarial Assumptions

Overview

For any pension plan, actuarial assumptions are selected that are intended to provide reasonable estimates of future expected events, such as retirement, turnover, and mortality. These assumptions, along with an actuarial cost method, the employee census data, and the plan's provisions, are used to determine the actuarial liabilities and the overall actuarially determined funding requirements for the plan. The true cost to the plan over time will be the actual benefit payments and expenses required by the plan's provisions for the participant group under the plan. To the extent the actual experience deviates from the assumptions, experience gains and losses will occur. These gains (losses) then serve to reduce (increase) future actuarially determined contributions and increase (reduce) the funded ratio. The actuarial assumptions should be individually reasonable and consistent in the aggregate, and should be reviewed periodically to ensure that they remain appropriate.

The Actuarial Standards Board ("ASB") provides guidance on establishing actuarial assumptions for a retirement program through the following Actuarial Standards of Practices (ASOP):

- (1) ASOP No. 4, *Measuring Pension Obligations and Determining Pension Plan Costs or Contributions*
- (2) ASOP No. 23, *Data Quality*
- (3) ASOP No. 25, *Credibility Procedures*
- (4) ASOP No. 27, *Selection of Economic Assumptions for Measuring Pension Obligations*
- (5) ASOP No. 35, *Selection of Demographic and Other Noneconomic Assumptions for Measuring Pension Obligations*
- (6) ASOP No. 44, *Selection and Use of Asset Valuation Methods for Pension Valuations*
- (7) ASOP No. 51, *Assessment and Disclosure of Risk Associated with Measuring Pension Obligations and Determining Pension Plan Contributions*
- (8) ASOP No. 56, *Modelling*

We generally reviewed the application of the ASOPs applicable on the valuation date of July 1, 2021 for OPERS and URSJJ. Subsequent changes to the ASOPs will have to be reflected in future actuarial valuation reports.

The actuarial valuation reports for OPERS and URSJJ contain descriptions of the actuarial assumptions which were used in the 2021 actuarial valuations. Additionally, the retained actuary published an actuarial experience study report, dated May 13, 2020. We conducted a thorough review of these documents in order to assess the reasonableness of the assumptions used in the actuarial valuations.

Actuarial assumptions for the valuation of retirement programs are of two types: (i) demographic assumptions, and (ii) economic assumptions. We have assessed the reasonableness of both types as part of this actuarial audit.

Demographic Assumptions

General

These assumptions simulate the movement of participants into and out of plan coverage and between status types. Key demographic assumptions are:

- turnover among active members,
- retirement patterns among active members, and
- healthy retiree mortality.

In addition, there are a number of other demographic assumptions with less substantial impact on the results of the process, such as:

- disability incidence and mortality among disabled benefit recipients,
- mortality among active members,
- percent of active members who are married and the relationship of the ages of participants and spouses, and
- benefit elections upon retirement or termination.

Experience Study Process

Demographic assumptions for retirement programs are normally established by statistical studies of recent actual experience, called experience studies. Such studies underlie the assumptions used in the valuations.

In an experience study, the actuary first determines the number of deaths, retirements, etc. that occurred during the experience period. Then the actuary determines the number “expected” to occur, based on the current actuarial assumptions. Finally, the actuary calculates the A/E ratio, where “A” is the actual number (of retirements, for example) and “E” is the expected number. If the current assumptions were “perfect”, the A/E ratio would be 100%. When the A/E ratio varies much from 100%, it is a sign that new assumptions may be needed. (However, the actuary may prefer to set assumptions to produce an A/E ratio a little above or below 100%, in order to introduce some conservatism.)

The actuary can further enhance the “count-weighted” process, described above, by using a “liability-weighted” experience analysis. A liability-weighted analysis will generally use amounts such as benefits or liabilities to “weight” and review the experience. From the perspective of the retirement assumption, selecting an assumption based on headcount-weighting is consistent with estimating expected retirements, but selecting an assumption based on amount-weighting is consistent with minimizing gains and losses associated with expected retirements. By weighting the data by benefit amounts, the actuary gives more weight to members who have larger benefits (and thus have larger liabilities). The same concepts apply when the amount-weighted approach is applied to other demographic assumptions such as mortality and termination.

We commend the retained actuary for performing demographic analyses both on a “count-weighted” and “liability-weighted” basis and using the most appropriate information for the purpose.



Assumption Setting

Once it is determined whether or not an assumption needs adjustment, setting the new assumption depends upon the extent to which the current experience is an indicator of the long-term future.

- Full credibility may be given to the current experience. Under this approach, the new assumptions are set very close to recent experience.
- Alternatively, the recent experience might be given only partial credibility. Thus, the new assumptions may be set by blending the recent experience with the prior assumption.
- If recent experience is believed to be atypical of the future, such knowledge is taken into account.
- Finally, it may be determined that the size of the plan does not provide a large enough sample to make the data credible. In such cases, the experience of the plan may be disregarded and the assumption is set based upon industry standards for similar groups.

Actuarial Standards of Practice (ASOP) No. 35, *Selection of Demographic and Other Noneconomic Assumptions for Measuring Pension Obligations*, applies to actuaries when they are selecting demographic assumptions. In accordance with ASOP No. 35, an actuary should identify the types of demographic assumptions to use for a specific measurement. In doing so, the actuary should determine the following:

- a) The purpose and nature of the measurement;
- b) The plan provisions or benefits and factors that will affect the timing and value of any potential benefit payments;
- c) The characteristics of the obligation to be measured (such as measurement period, pattern of plan payments over time, open or closed group, and volatility);
- d) The contingencies that give rise to benefits or result in loss of benefits;
- e) The significance of each assumption; and
- f) The characteristics of the covered group.

Not every contingency requires a separate assumption. For example, for a plan that is expected to provide benefits of equal value to employees who voluntarily terminate employment, become disabled, or retire, the actuary may use an assumption that reflects some or all of the above contingencies in combination rather than selecting a separate assumption for each.

Observations on Demographic Assumptions

Overall, it appears that the current demographic assumptions are reasonable for valuing the liabilities and assessing the contributions as of 2021. Below, we offer some recommendations to ensure that the assumptions are best estimate assumptions and that the assumptions are serving the long-term sustainability of the plan.

Healthy Retiree Mortality

OPERS

The most important demographic assumption is post-retirement mortality because this assumption is a predictor of how long pension payments will be made. Historically, up to about a decade ago, actuaries have used “static” mortality tables, meaning that the probabilities were not anticipated to change over time and longevity was not explicitly anticipated to improve. Typically, mortality tables were chosen such that there was a 10% or 20% margin of conservatism within those probabilities compared to the current experience to allow for *some* possible improvement. However, over time, as longevity consistently continued to improve, those margins would be eroded, and each time an experience study was performed, the margins would be reset and a new unfunded liability would be created from failure to pre-recognize this improvement.

Over the last decade, most plans have moved to a model that explicitly anticipates longevity improvement called generational mortality. The concept that today’s 65-year old will live longer than the 65-year old from a decade ago, and the 65-year old 10 years from now will live even longer than today’s 65-year old is pre-recognized within the model. Thus, within reason, only minor adjustments to the mortality assumption should need to be made over time with the expectation that future adjustments may move expected costs either higher or lower - in other words, the assumption is unbiased.

OPERS continues to use static mortality consistent with the historical model, and it is reasonable to expect that there will be new unfunded liabilities as future experience studies are performed. The static approach is far from ideal when trying to prefund benefits as a level percentage of payroll and may prematurely give the impression that the plan is fully funded.

The reason given in the experience study for continuing to use this approach was that:

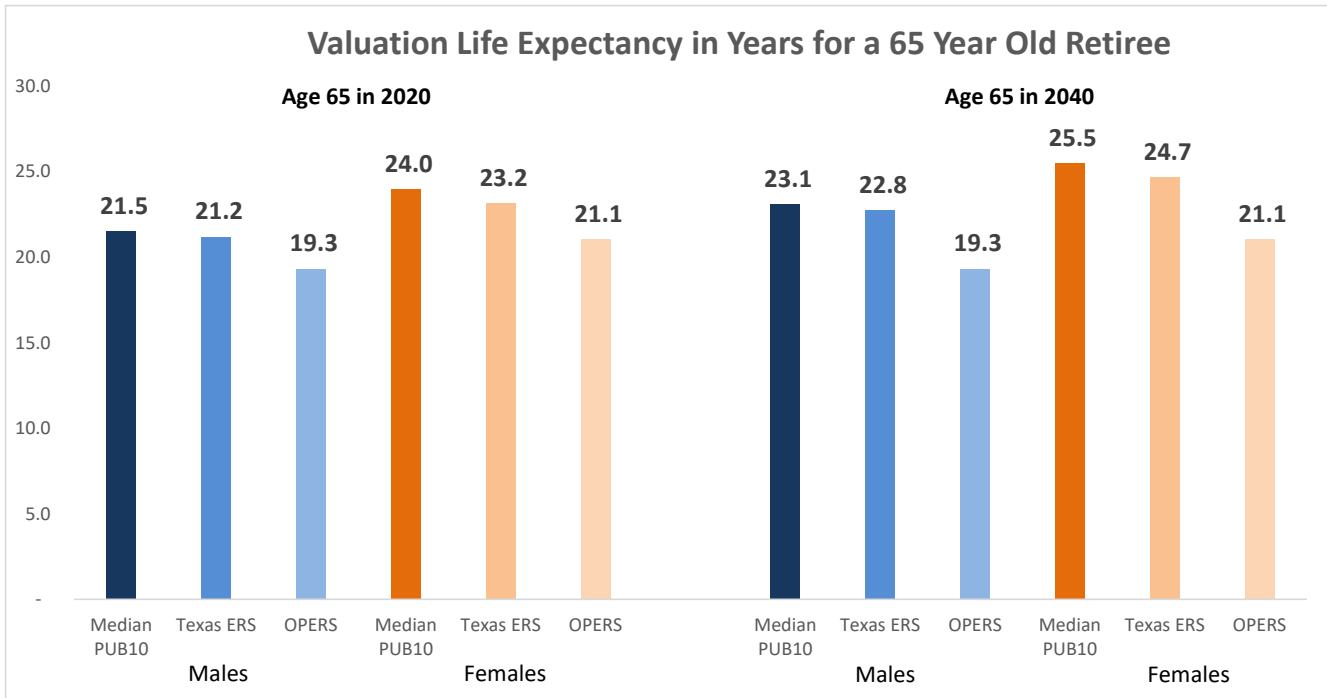
“Because the guiding statutes require that actuarial factors for optional form of payments, etc. be the same as the assumptions used in the valuation, the generational approach cannot be used. (It would require a new set of factors each year, something which is not desirable from a member planning perspective and which would be a burdensome administrative challenge.)”

We reviewed the statutory language regarding this. The language specifies that actuarial equivalence for administrative purposes be determined “using interest and mortality assumptions consistent with the actuarial assumptions adopted by the Board of Trustees for purposes of preparing the annual actuarial evaluation.” Although we are not legal experts, we do not believe that the “consistent with” language would preclude OPERS from using generational mortality within the funding valuation and a projected static table for actuarial equivalence for administrative purposes and have observed other systems with similar language use this approach. This is because the actuarial equivalence factors are used for a finite period of time between experience studies (and thus events occurring very close to each other) while the mortality assumption in the funding valuation is supposed to reflect more long-term mortality trends. This difference in purposes allows for use of two explicitly different approaches, while retaining assumptions that are consistent.

Beyond using a static approach, the table chosen from the universe of recent standard published tables was the “below median” table which reflects impaired mortality as compared to what would be

considered the standard published table. In addition, female probabilities were further impaired meaningfully beyond the “below median” table.

This assumption places the OPERS population in a quite impaired longevity expectation in comparison to its peers. The following chart provides the life expectancy for a 65 year old retiree used in the valuation of OPERS compared to the median version of the standard PUB(10) tables for general employees, fully projected with MP-2019 and to the valuation assumption used for the Employees Retirement System of Texas.



As shown, the life expectancies used in the OPERS valuation are quite lower than those used in the average valuation nationally and the Texas ERS valuation. However, some of this difference is duplicated in the CDC statistics, with Texas being 24th nationally in longevity and Oklahoma being 45th. We suggest the next experience study include some other sources of data to further verify the appropriateness of an assumption this far from the median.

That said, even if the assumptions are reasonable for the current generation of retirees, the use of a static table likely underestimates the projected liabilities of future retirees. Shown above, a member currently age 45 who will achieve age 65 in 20 years is projecting an almost 20% difference in longevity. In the report, the language used implies the actuary already expects there to be mortality improvements in the future and further adjustments to the assumption will be required. Page 22 of the report has this quote:

“The analysis of the actual post-retirement mortality experience over the three-year experience study period yields actual/expected ratios of 111% and 114% respectively for males and females on a liability basis, however. These margins, are adequate, but have declined from three years ago as would be anticipated with expected mortality improvements.”

The final recommendation includes a projection to 2030 in the mortality rates based on the most recently published MP-2019. The final margin is stated as 113% for males and 117% for females “which should reduce the likelihood of needing to change tables in the next experience study.”

Thus, the actuary concedes that the current assumption is expected to not remain appropriate, and can anticipate the direction and approximate magnitude of the change. Also, no analysis is given as to why 113% and 117% are preferable, or reasonable, amounts.

The report does not mention the amount of credibility given the data, but based on the recommendations, it appears full credibility was given. Based on the retiree deaths shown in the most recent valuation report, we would anticipate that there were roughly 4,000 retiree deaths in the three-year experience period, with about half of those being males and half of those being females, or 2,000 per gender. To further support using a table this far from the median published table and this far from the assumptions used in surrounding states, we would suggest expanding the number of years used in the experience data (particularly in the upcoming experience study which will include primarily pandemic data), and we would suggest showing the experience based on the probabilities in effect during the experience period. The report currently only discloses the valuation probabilities, which have been projected to 2030, against the experience data. Showing the data as of the experience period will allow the reader to be able to explicitly see the fit of the base table and parse out any anticipated future improvements in longevity.

We feel that the current mortality assumption is likely a reasonable assumption in the context of determining the contribution sufficiency of the current contribution rates as of 2021. However, we expect that this assumption will continue to put upward pressure on the liabilities, and we think a more strategically applied assumption would be in the best interest of OPERS, especially given the fully funded message of the current report. In the upcoming experience study, we recommend that:

- OPERS move to a generational mortality approach;
- a longer experience period be used to set the assumption to increase the credibility of the analysis;
- comparisons between the mortality probabilities and the experience data be made during the experience study period without the additional projection.

URSJJ

For URSJJ retiree mortality, the retained actuary cites lack of credible data and does not choose the tables based on experience study. Instead, they use the OPERS table discussed above for general employees set back one year (essentially slightly healthier than OPERS retirees). We agree that the data is not credible and should not be used to alter the standard tables, however we find the one year set back from general OPERS is likely not enough difference. Life expectancies tend to be correlated with income and education, and judges would be materially better off on both compared to a general population and thus mortality assumptions for judges in other states usually are based on the above median income tables, or in some circumstances the Teacher versions of the tables. The mortality assumption produced losses during fiscal year 2019 and was essentially neutral during fiscal years 2020 and 2021 (which arguably should have produced gains during the pandemic). This experience, although not conclusive, suggests that rather than including a margin for conservatism, the assumption for this plan is potentially aggressive. We would recommend at a minimum using the standard above median income table to reflect the education and income of the underlying population.

Departures (Retirement, Termination, Disability and Active Mortality) and Other Demographic Assumptions – OPERS and URSJJ

In general, the proposed assumption changes regarding demographic assumptions other than retiree mortality appear reasonable. The actual retirements on a liability-weighted basis for URSJJ exceeded the expected retirements, indicating the assumption *could* be aggressive. However, the retained actuary noted that this experience has been volatile. We reviewed the prior experience study report which indicated substantially less retirements occurred in that experience period than expected and find the decision to leave the assumption to be justified.

We were surprised to see OPERS forfeiture (members taking a refund when entitled to an annuity) rates as high as they are in a System with 3.5% employee contributions and no interest credited (where the value of the refund is substantially less than the annuity), however the experience data and anecdotal evidence from staff both appear to support the assumption.

Economic Assumptions

General

Economic assumptions simulate the impact of economic forces on the amounts and values of future benefits. Key economic assumptions are the assumed rate of investment return and assumed rates of future salary increase. All economic assumptions are built upon an underlying inflation assumption.

ASOP No. 27, *Selection of Economic Assumptions for Measuring Pension Obligations*, applies to actuaries when they are selecting economic assumptions. ASOP No. 27 states that each economic assumption selected by the actuary should be reasonable. For this purpose, an assumption is reasonable if it has the following characteristics:

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

Additionally, ASOP No. 27 states that communications regarding actuarial reports subject to this standard should contain the following:

- a) A description of each significant assumption used in the measurement and whether the assumption represents an estimate of future experience, and
- b) A description of the information and analysis used in selecting each economic assumption that has a significant effect on the measurement.



Inflation

The actuary provides several sources of expectations as well as comparisons to peers. We believe the inflation assumption of 2.50% is reasonable based on the information presented.

Administrative Expenses

The administrative expenses assumed are provided by Staff based on estimates for the year. Comparing these amounts to actual administrative expenses paid during the year, it appears that these estimates are conservative. We find the process reasonable.

Investment Return

The investment return assumption is one of the principal assumptions in any actuarial valuation. It is used to discount future expected benefit payments to the valuation date to determine the liabilities of the retirement system. Even a small change to this assumption can produce significant changes to the liabilities and contribution rates.

The actuary provides several sources of expectations as well as comparisons to peers. There are good illustrations showing the range of various expectations and probabilities of success. We believe the investment return assumption of 6.50% is reasonable based on the information presented, being a value in between the short term and longer-term expectations.

Wage-Related Assumptions

For all of the wage-related assumptions, three years is a small timeframe for analyzing overall trends. Similar to the mortality analysis, we suggest including data over several studies, to as much as ten years of data, to produce more stability from study to study.

For the merit-based salary increase assumption, the changes appear reasonable and in the right direction. The 3.25% payroll growth assumption appears reasonable based on the information provided, however no OPERS specific data was included. The underlying presumption was that OPERS wage experience would be consistent with national statistics over the long term. This could be true, but more analysis comparing the actual trends from OPERS to those national statistics would help reinforce this case. Overall public sector payroll for general employees, especially for state employee groups, have not been growing at the same rate as private sector, or even other public sector groups. Also, active headcounts have not been growing. GRS notes that based on the available historical data in the report, OPERS has experienced actual payroll growth of 1.7% and URSJJ has experienced actual payroll growth of 2.2% over the last 17 years, well shy of the 3.25% assumption.

Actuarial Methods

Actuarial Cost Method

The Entry Age Normal actuarial cost method is the most prevalent funding method in the public sector. It is appropriate for the public sector because it produces costs that remain relatively stable as a percentage of payroll over time, resulting in intergenerational equity for taxpayers. We have reviewed the retained actuary's application of the Entry Age Normal actuarial cost method and we believe that the method is reasonable and appropriately applied.

Asset Smoothing Method

OPERS and URSJJ use five-year asset smoothing with a 20% corridor. This is a reasonable and common approach.

Amortization Method

OPERS and URSJJ use a closed 20-year amortization commencing July 1, 2007, which results in a six-year amortization at the current valuation. It is our understanding that subsequent to the valuation as of July 1, 2021 a new amortization policy was adopted by the Board. This new policy keeps the current amortization base (6 years as of July 1, 2021) and amortizes new gains or losses over 15 years.

Although we agree with moving to an amortization structure that can better deal with volatility, and although the policy adopted is not inappropriate, our recommendation would not have been to retain the current bases and their six-year amortization periods, particularly for URSJJ. In general, we do not favor policies that produce artificial volatility (volatility that can be anticipated in magnitude and direction, or produce unproductive results) or that give too much credit for surpluses. For example, using the illustrated result on page 30 of the valuation presentation from last year shows that the results after the change in policy are not optimal in comparison to the starting point. The ending payment is 7 times larger than the payment would have been without a change, and results in a payment that larger than the UAAL itself, basically making a 1-year effective amortization period. It would have been a better outcome to leave the large gain base at 6 years as well, and adopt a policy that would have dealt with future new losses over 15 years. In situations when the plan is in a surplus position, we would recommend that all prior bases are eliminated and any surplus is credited over no shorter than a rolling 15-year period. As it stands currently, URSJJ will likely have an effective amortization of the surplus that is less than five years at the upcoming valuation.

SECTION IV

DATA PROCESSING AND RETENTION

Data Processing and Retention

GRS compared the valuation data provided by OPERS Staff and the final valuation data provided by Cavanaugh Macdonald to identify any manual adjustments or assumptions made by the Actuary in determining the final valuation data. In doing so, GRS identified some concerns regarding the data used for deferred vested members. OPERS staff indicated that active members that terminate with a vested benefit in the plan prior to retirement are not identified specifically as vested terminated members until they submit certain paperwork with the System. No benefit is determined until the member submits the paperwork, which for many members may not happen until retirement eligibility.

As of the valuation date, there were 3,513 members in this group that were assumed to be vested, but for whom the System did not have the required paperwork. The census data provided to Cavanaugh Macdonald for these members does not include sufficient information to estimate the benefit and retirement eligibility date.

As such, Cavanaugh Macdonald is determining an estimated benefit and retirement date for new deferred vested members from the prior year's active member data and rolling forward estimates from prior valuations for members that continue in this group from year to year. In some cases, Cavanaugh Macdonald is relying on estimates from prior actuaries that were passed along.

This is a reasonable approach based on the data provided and likely has no impact on the valuation results. However, it would be better to have a more up-to-date procedure that does not rely on keeping valuation results from years and perhaps decades in the past. We suggest that the actuary and OPERS Staff research if another option is available based on the data that is available in the OPERS system. Regardless, Cavanaugh Macdonald should increase their disclosures regarding their reliance on historical data and their retention of this data for the System. There is some mention of this group on pages 51 and 68 of the report, however, the true nature of this data reliance is not apparent from the report which indicates that estimates are being provided by the System.

GRS also identified other instances where Cavanaugh Macdonald made assumptions for missing or historical data. We generally found these to be immaterial to the overall results, but encourage increased disclosure of assumptions being made or data being retained.

SECTION V

ACTUARIAL VALUATION RESULTS

Actuarial Valuation Results

Replication of Actuarial Valuation Results

We replicated the 2021 actuarial valuation results and the contribution development for both OPERS and URSJJ retirement systems. Using the assumptions and methods used by the retained actuary for the 2021 actuarial valuations, we were able to replicate the plan liabilities very closely.

OPERS Key Valuation Results as of July 1, 2021

	CavMac	GRS	Difference
Present Value of Future Benefits			
Actives	\$ 5,203.41	\$ 5,241.80	0.7%
Inactive (Vested and Non Vested)	498.59	490.68	-1.6%
Annuitants	<u>6,654.70</u>	<u>6,625.31</u>	-0.4%
Total	\$ 12,356.70	\$ 12,357.79	0.0%
Actuarial Accrued Liability	\$ 11,046.24	\$ 11,057.31	0.1%
Actuarial Value of Assets	<u>10,991.21</u>	<u>10,991.21</u>	
Unfunded Accrued Liability	\$ 55.03	\$ 66.11	
Normal Cost	\$ 168.62	\$ 175.81	4.3%
Estimated Closed Group Payroll	\$ 1,556.54	\$ 1,556.54	0.0%
Normal Cost as % of Pay	10.83%	11.29%	4.3%
Open Group Payroll	\$ 1,947.13	\$ 1,947.13	
Amortization	0.52%	0.63%	
Expenses	0.48%	0.48%	
Total Actuarially Determined Contribution (ADC)	11.84%	12.40%	
Blended Employee Rate	<u>4.25%</u>	<u>4.25%</u>	
Net Employer ADC	7.59%	8.16%	

\$ in millions

During the replication process, we did identify one minor finding which we suggest be remedied in the upcoming valuation. Elected officials are eligible for an automatic 50% joint and survivor benefit. There is no charge for the benefit and the retiree does not have to elect the benefit at retirement. As a result, there is no optional form coverage information collected at retirement and accordingly no optional form indicated in the retiree valuation data from the System. However, upon death, the surviving spouse will be eligible for the 50% benefit. We recommend that Cavanaugh Macdonald incorporate an assumption for this missing optional form for these elected class retirees. GRS estimates that doing so will increase OPERS liabilities by \$8 million which is immaterial to the aggregate results.



URSJJ Key Valuation Results as of July 1, 2021

	CavMac	GRS	Difference
Present Value of Future Benefits			
Actives	\$ 183.38	\$ 187.21	2.1%
Inactive (Vested and Non Vested)	6.79	6.91	1.8%
Annuitants	<u>220.32</u>	<u>223.62</u>	1.5%
Total	\$ 410.50	\$ 417.75	1.8%
Actuarial Accrued Liability	\$ 341.94	\$ 347.85	1.7%
Actuarial Value of Assets	<u>380.40</u>	<u>380.40</u>	
Unfunded Accrued Liability	\$ (38.47)	\$ (32.55)	
Normal Cost	\$ 9.38	\$ 9.81	4.5%
Estimated Closed Group Payroll	\$ 36.30	\$ 36.30	0.0%
Normal Cost as % of Pay	25.85%	27.02%	4.5%
Open Group Payroll	\$ 36.30	\$ 36.30	
Amortization	-19.67%	-16.64%	
Expenses	0.66%	0.66%	
Total Actuarially Determined Contribution (ADC)	6.84%	11.04%	
Blended Employee Rate	8.00%	8.00%	
Net Employer ADC	-1.16%	3.04%	
\$ in millions			

Through the replication process, GRS isolated an issue with the mortality tables being used. Rather than projected longevity improvements from 2010 to 2030 (based on the base year of 2010 of the base mortality table), the mortality rates reflected longevity improvements projected from 2019 to 2030 (the year of implementation). This had the effect of making the mortality rates too high (longevity too low), and GRS estimates this difference resulted in a difference of 2% on the Present value of Benefits. Essentially, all differences in the Total Present Value of Benefits are accounted for by this finding.

Although the ADCs determined by GRS and Cavanaugh Macdonald look substantially different, this is due to the leveraged nature of both the unfunded liability (the accrued liabilities are 1.7% different but the unfunded liabilities are 15% different) and of the ADC calculation (normal costs are being offset by amortization of the surplus to result in a small net amount). These differences are easily traceable and explainable.



SECTION VI

CONTENT OF THE VALUATION REPORT

Content of the Valuation Report

We have reviewed the actuarial valuation report with particular attention to the requirements of ASOP Nos. 4, 41, 51 and 56, and have no major concerns in this regard.

We have two minor items for the upcoming report:

- Currently there is no mention of the automatic joint and survivor benefits for elected class members within the description of benefits within the OPERS report. This should be incorporated this year.
- As noted, in the data section, page 51 of the report should be updated to reflect that Cavanaugh Macdonald is relying on their own calculations (not Staff's) as well as historical calculations of prior actuaries for determination of the benefits of terminated vested members who have not completed certain paperwork.

SECTION VII

SUMMARY

Summary

Based on our review of the census data, experience study documents, liability replications, and actuarial valuation reports, we believe the 2021 actuarial valuations for OPERS are reasonable for the purpose of determining the sufficiency of the current contribution rates, based on reasonable assumptions and methods, and the reports generally comply with the Actuarial Standards of Practice.

GRS has identified some items for the Board, the retained actuary and Staff for the upcoming valuation and experience study which we believe will further improve the accuracy of your valuation results in future years, as well as some strategic considerations for the Board going forward. These recommendations are for consideration, but do not hinder our opinion of this being a “clean” audit.

Considerations for communications:

The message conveyed by both the OPERS and URSJJ reports is one of well-funded plans, which is true and a positive outcome, but it logically follows that the plans could be potentially be sustained with significantly lower contribution rates. This places these plans in a position where careful messaging and strategic choosing of assumptions is warranted. In addition, OPERS, given its closed nature and no automatic COLA, has specific circumstances which may put additional pressures on the plan over the long term.

- Currently, the report states that *“the purpose of this report is to provide a summary of the funded status of the System as of July 1, 2021 and to provide the actuarially determined rate.”* Given that the contributions are not set by this valuation, the actual purpose is to assess the adequacy of the statutory rates. This and other language be updated to frame the actuarially determined rate as a test of sufficiency of the statutory rates. Efforts should be made to increase awareness that the actuarially determined rate should not be used as a target to set contributions.
- To support the current investment return assumption, is it presumed that asset allocations will remain relatively unchanged for the foreseeable future. However, given the largely closed group nature of the OPERS plan and the current funding position, we could foresee possible pressures to the net cash flow or liquidity needs of the plan. In addition to the natural evolution of the closed group, as the perceived funding level of the plan improves, potentially to a surplus position, there could be pressure to discontinue contributions from Pathfinder member payroll or lower statutory rates. Thus, over the long term, it would be reasonable to expect that the cash flow demands, and thus the asset allocation, will change. Consideration for this could be reflected in selecting the investment return assumption to account for and pre-fund these potential pressures.
- The report does not include an assumption for a COLA, however, it is reasonable to expect that there will be tremendous political pressure to provide one. We understand that the current statutes technically do not allow for a COLA without providing additional funding to pay for it. However, it is also our understanding that a COLA was provided after this legislation was in place that did not include additional funding to go with it. Future communication efforts around the COLA should include recognition of the long-term impacts of doing so, especially in the light of possible changes to future asset allocations and updates to the mortality assumption.