



**REQUEST FOR PROPOSAL No.  
MPO2600000001**

**Actuarial Services**

**TECHNICAL PROPOSAL**

**PREPARED FOR**

Janet Warren  
Procurement Officer  
Municipal Pensions Oversight Board

**PREPARED BY**

September 8, 2025

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**Subject:** Proposal Submission for RFP MPO2600000001 – Actuarial Services

Dear Ms. Warren and Members of the Evaluation Committee,

On behalf of Bolton, we are pleased to submit our proposal in response to RFP MPO2600000001 for actuarial services. It has been our privilege to serve the Municipal Pensions Oversight Board (MPOB) since 2019, and we are honored by the opportunity to continue supporting your mission to ensure the financial health and sustainability of West Virginia's 53 municipal policemen's and firemen's pension and relief funds under the oversight of the MPOB.

Over the past seven years, we have developed a deep understanding of the statutory requirements that govern these 53 plans. Our meticulous study of West Virginia Code (WV Code) §8-22-16 through §8-22-28 has allowed us to bring new insights and tools to the MPOB to help ensure consistency across the plans. Notably, we've helped design a new amortization policy for the Standard, Optional, and Optional II funding policies to mitigate exposure to severe contribution volatility and have developed tools for calculating survivor benefits by applying the re-indexation provisions of §8-22-26a.

Our team of credentialed actuaries has consistently delivered timely, accurate, and actionable actuarial valuation reports, consolidated reports, GASB 67/68 supplemental reports, DROP prospective and retrospective evaluations, legislative analyses, and COLA letters in full compliance with WV Code and the actuarial standards of practice (ASOPs). This dedication to timeliness and technical excellence was paramount to receiving a clean actuarial audit report in 2024.

We are thrilled to be a part of such a collaborative relationship with the MPOB staff, municipal finance officers, and pension board trustees and secretaries; it's a relationship strengthened by the shared recognition that there is no substitution for in-person, face-to-face discussions at Board meetings and trainings. As you have seen firsthand, our approach brings actuarial expertise and emphasizes availability, transparency, responsiveness, and a commitment to continuous improvement.

Enclosed is our technical proposal, which outlines our methodology, qualifications, and experience. Our cost proposal has been submitted separately in accordance with the RFP instructions.

We look forward to the opportunity to present our proposal during the oral presentation phase and to continue our partnership with the MPOB in the years ahead.

Thank you for your continued trust and consideration.



**James Ritchie, ASA, EA, FCA, MAAA**

President of Bolton Retirement

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# ATTACHMENT A: VENDOR RESPONSE SHEET

## SECTION 4, SUBSECTION 4.2.1.1. GOAL 1

To find a consultant with qualified actuaries to prepare actuarial valuation reports for each of the 53 municipal policemen's and firemen's pension and relief funds in West Virginia. The reports should comply with all actuarial standards of practice (ASOPs), in particular, the sections in ASOP 4 regarding actuarial gain and loss analysis, reasonable actuarially determined contributions, and the low-default-risk obligation measure and discussion. Moreover, the reports should comply with ASOP 51 regarding the disclosures of certain potential risks to the plan, which should include the calculation of plan maturity risk measures. These studies are to be provided each year of the contract. The actuarial valuations from the qualified actuary are used by each municipality and the MPOB to determine a municipal policemen's or firemen's pension and relief fund's eligibility to receive state money and to provide supplemental benefits to its pensioners. W.Va. Code §8-22-20 defines the four funding methodologies available for plan sponsors to use in fiscal year 2026 and going forward. Each plan sponsor should receive one actuarial valuation report which reflects the corresponding funding methodology it currently uses. In addition, and where it is permissible by W. Va. Code, the report should contain a section that explains how a plan would be affected if it was changed to one of the other applicable funding methodologies allowed by WV statutes.

The consultant is responsible for the collection of all member census data and fund asset information for each plan by working with each plan sponsor's city treasurer/finance director/city clerk and each of the 53 pension secretaries. The consultant is responsible for defining each data set needed for the proposed work. Section 4.2.2.3 of this document clearly defines the acceptable methods to be used for collecting this information. Data collection for the actuarial studies begins in the first quarter of each calendar year for the preceding fiscal year ending on June 30th. All 53 actuarial studies are required to be completed by September 30th of each year.

Bolton is proud to have served as the actuarial consultant to the Municipal Pensions Oversight Board (MPOB) since 2019. Over the past seven years, we have built a strong, collaborative relationship with the MPOB, the MPOB staff and its stakeholders and have delivered timely, high-quality actuarial services that meet the Board's statutory obligations and strategic goals.

We note that section 4.2 of the RFP asks vendors to include commentary on how proposed approaches may be superior or inferior to other approaches. We strongly believe that our relationship with the MPOB and the municipalities is unrivaled. By attending all Board meetings in person, having at least one of the two lead actuaries always available, and providing consistent communication (supported by the ease of transferring, storing, and accessing information via Citrix ShareFile), we have a clear understanding of the wants, needs, and perspectives of the MPOB, the pension boards, the cities, and plan membership. This understanding is the foundation for the enhanced processes and insights (not introduced by preceding actuaries) that we have brought to this engagement. In the following sections, we describe the valuation reports and our processes for the annual valuations, which contain a level of customization unique to Bolton.

The process that sets Bolton apart from other actuarial firms is the frequent communication with the MPOB staff. We commit to continue to meet with MPOB staff for an hour per week during the peak valuation season (July through October) and either monthly, bi-weekly, or weekly during the rest of the year as needed and requested by MPOB staff.

A thoroughly and thoughtfully designed valuation process has been the backbone of success since the start of this engagement given the number of plans under the oversight of the MPOB. Considerable research went into streamlining templates and creating flexible, future-proof valuation coding that can be easily adapted for ad-hoc, urgent requests. The approach of allocating significant time and resources up front to create versatile and robust models **by plan** was an investment that other actuarial firms may not have pursued. This commitment was validated when the first valuation cycle in calendar year 2019 (for the July 1, 2018 valuations) went smoothly, and the process has improved further with each successive valuation. We've continued to refine and finesse the process using clear, standardized templates and effective communication. Our shared dedication to perfecting the valuation cycle has resulted in the process' status today as a well-oiled machine, an outcome aided by the consistency of the Bolton team supporting it. Jim Ritchie, Jordan McClane, Alan Torroella, and Janice Twardowicz have and hope to continue to support this engagement for years to come.

Since the beginning, we have facilitated the transfer of information via ShareFile, including census data, data questions and answers, asset information, required information for premium tax allocations, compliance reviews, COLA calculations, valuation reports, and GASB reports. The secure portal is very easy to use, add or remove members, and has been a valuable recordkeeping tool for the MPOB, the municipalities, and Bolton. Users seem very comfortable navigating around the system and appreciate the protection it provides.

### **ASOP-Compliant Valuation Reports and Funding Policy Considerations**

Throughout our engagement with the MPOB, we have developed five different sets of funding valuation reports to accommodate the various funding policies permitted by WV Code: Standard, Optional (including Optional from Standard), Optional II, Alternative, and Conservation (there are no plans still using the Conservation funding policy as of the writing of this proposal). We have designed these sets of reports to be incredibly consistent, differing only by the exhibits that develop the funding policy contribution and the projections of future results (under the current policy and under a different policy, as applicable and described below). The projections are very detailed, displaying 40 years of projections of the components of the asset reconciliation, liability, funded status, and contribution development. The projections also contain high-level summary charts, such that users of the report can see both a high-level overview as well as the year-by-year granular results. The following projections are provided in the valuation reports:

- Open group projections to determine eligibility for the premium tax allocation for the open funding policies (Alternative and Standard)
- Closed group projections for all funding policies to determine whether COLA is granted and, for closed funding policies (Optional, Optional from Standard and Optional II), to determine eligibility for the premium tax allocation
- Two sets of projections showing an immediate change in funding policy for plans currently using the Alternative funding policy: one set illustrating a switch to the Optional funding policy and the other set illustrating a switch to the Optional II funding policy. For open plans using the Standard funding policy, projections are shown for an immediate change to the Optional (closed) funding policy.

- Two sets of projections showing a change in funding policy when “fiscally advantageous” (i.e., when the contribution under the new policy would be smaller than the current policy contribution) for plans currently using the Alternative funding policy: one set illustrating a switch to the Optional funding policy and the other set illustrating a switch to the Optional II funding policy.

As the plans and the WV Code have evolved over time, we’ve adapted our reports to accommodate several different variations to appropriately capture and reflect plans in special circumstances. For instance, additional coding, analysis, and commentary have been implemented for plans that have:

- Instituted a DROP
- Issued pension obligation bonds
- Agreed to continue benefit overpayments for individuals who commenced pension payments after July 2017 as authorized by the respective City and permitted by WV Code §8-22-27a
- Implemented a targeted full funding year that precedes the assumed full funding year under the applicable funding policy

Our reports comply with the applicable actuarial standards of practice (ASOPs), including:

- ASOP 4: Measuring Pension Obligations and Determining Pension Plan Costs or Contributions
- ASOP 23: Data Quality
- ASOP 27: Selection of Assumptions for Measuring Pension Obligations
  - Formerly ASOP 27 (Economic Assumptions) and ASOP 35 (Demographic Assumptions)
- ASOP 41: Actuarial Communications
- ASOP 44: Selection and Use of Asset Valuation Methods for Pension Valuations
- ASOP 51: Assessment and Disclosure of Risk Associated with Measuring Pension Obligations and Determining Pension Plan Contributions
- ASOP 56: Modeling

In many cases, the valuation reports contain exhibits and commentary beyond what is required in the ASOPs to provide additional information that may be helpful to users of the reports. Below we highlight the specific ASOPs mentioned in the RFP.

#### **ASOP 4 – Measuring pension obligations, costs, and contributions**

ASOP 4 is the overarching ASOP governing pension plan valuations. This ASOP received a fairly substantial overhaul in its most recent update, which became effective for actuarial reports that (1) are issued after February 14, 2023 **and** (2) have a measurement date after February 14, 2023. The various topics included in the latest update and how they are addressed in the Bolton valuation reports are summarized below:

- Separating total gain and loss into investment and non-investment gain and loss.
  - All the valuation reports that we have produced for the MPOB thus far (valuation dates July 1, 2018 – July 1, 2023) have shown investment gain and loss separate from non-investment gain and loss. In fact, we perform a comprehensive gain and loss analysis for all 53 plans as part of our initial checks of the compiled valuation data. This has helped us uncover facets of certain plans that would not have been obvious without further investigation – such as one-time (non-

recurring) unexpected payments to active members of certain plans and unexpected termination of benefits in another plan. The gain and loss analysis is one of the areas where we, as actuaries, concentrate a lot of our review as it, along with evaluation of individual sample lives, explains and substantiates the results by plan.

- Calculating reasonable actuarially determined contributions (ADCs).
  - The Alternative and Conservation funding policies are not consistent with generally accepted actuarial principles and policies and the contributions produced under these policies generally do not constitute a reasonable ADC. All valuation reports that we have produced for the MPOB for plans that use these funding policies have also separately included the calculation of an ADC for GASB purposes. These separate ADCs satisfy the conditions of a reasonable ADC under ASOP 4 and were included in valuation reports even before it was a requirement in ASOP 4 (effective for reports to which both of the following apply: measurement date after February 15, 2023 and issued after February 15, 2023). To highlight compliance with this new requirement in the ASOP, we added text beginning with the July 1, 2023 valuation reports to denote that the separate ADCs satisfy the requirements of a reasonable ADC as defined by the ASOP.
  - The contributions developed under the other funding policies generally satisfy the conditions of a reasonable ADC under ASOP 4 and we have denoted that in the text preceding the contribution development beginning with the July 1, 2023 valuation reports.
- Calculating a low-default-risk obligation measure (LDRM) and assessing the implications of a contribution allocation procedure on funding policy.
  - All July 1, 2023 actuarial valuation reports include a comprehensive, seven-page discussion of risk that includes risk measures, elements of pension plan funding, significant risks affecting pension plans, quantification of investment and funded status risk through an LDRM calculation, risk considerations in assessing a funding policy, historical plan risk and maturity measures, and additional review considerations. The section not only displays the LDRM, but it also provides commentary on what the metric represents, the relationship between the actuarial accrued liability and the LDRM, and how it may be useful to users of the report. Some of the requirements of ASOP 4 are intertwined with some of the requirements in ASOP 51, as discussed in the ASOP 51 section below.
- Consideration of contribution lag
  - In the first experience study and actuarial methods recommendation report that we produced for the MPOB (published in 2020), we recommended that the unfunded liability be rolled forward to the contribution year in the development of the contribution (for funding policies with a liability amortization component) in order to account for contribution lag (i.e., contributions are developed for the year following the anniversary of the valuation date). This recommendation was adopted by the MPOB beginning with the July 1, 2020 actuarial valuations (years before the effective date of this requirement of the ASOP). Consideration of contribution lag has been a Bolton policy for many years.

Also worth noting is that, although contributions developed under the Standard and Optional funding policies comprise a normal cost and amortization of unfunded liability, they were, prior to the 2021 legislative session, going to become subject to potential extreme volatility as the entire unfunded liability was amortized under a single base over a declining period. We worked

with the MPOB to institute layered amortization by source, which is generally considered a model level-cost allocation methodology in the Conference of Consulting Actuaries' (CCA) white paper *Actuarial Policies and Practices for Public Pension Plans*. This was a significant achievement, given that the funding policies are codified in state code. As one of the authors of the second edition of that CCA white paper, Jordan McClane was able to provide valuable insight into designing an amortization policy.

### **ASOP 51 - Risk**

As mentioned in the ASOP 4 section above, the July 1, 2023 actuarial valuation reports include a comprehensive, seven-page discussion of risk that includes risk measures, significant risks affecting pension plans (investment risk, contribution risk, longevity and other demographic risks, asset liability mismatch risk, and cash flow risks), historical plan risk and maturity measures (inactive liability as a percentage of total liability, assets to payroll, liabilities to payroll, and benefit payments to contributions), and other risk considerations.

Furthermore, the valuation reports for the Alternative and Conservation funding policies emphatically state that those funding policies are not based on actuarial principles and practices. A substantial risk for plans using these funding policies is the dramatic escalation of contribution requirements that may become untenable for the cities if pension contributions continue to balloon to a larger percentage of the municipality's budget. As discussed in the next section, several plans have transitioned out of these funding policies during our tenure as actuary.

### **ASOP 56 - Modeling**

As actuaries, modeling is a big part of our job description. For the 53 MPOB plans, modeling plays a critical role in the valuation reports. Beyond the modeling involved in generating a liability and normal cost, 40-year baseline projections are provided in all reports, regardless of funding policy. Additionally, for plans that employ funding policies which are eligible for change (Standard – to Optional; Alternative – to Optional or Optional II), 40-year baseline projections are included to display estimated results for switching policies.

The detailed modeling provided within our valuation reports have kickstarted several discussions to change funding policies for cities employing the Alternative funding policy. Over the past several years, multiple municipalities and pension boards have reached out to Bolton for additional analysis and discussion. Since we were engaged by the MPOB for actuarial services, the number of plans using the Alternative funding policy has nearly halved from 20 to 12.

We use proprietary and third-party models (such as the valuation software ProVal). We have tested these models to ensure they are used for their intended purposes, within their known limitations, and without any known material inconsistencies unless otherwise stated.

### **Data Processing**

Each year, the valuation cycle begins with Bolton uploading (between January and March) census data requests to ShareFile, Bolton's secure transfer portal, for retrieval by the contacts at each of the 53 plans. The ShareFile uploads are accompanied by an email to the appropriate contacts providing instructions for completing the requests. Note, when a Bolton team member creates a ShareFile account for a municipal contact, they are assigned to their respective plan's folder. Municipal contacts have access to information only for their plan. When the MPOB notifies Bolton that a new municipal contact needs to be added and/or an old contact removed,

a Bolton team member makes the update typically within 24 hours. Generally, MPOB updates the lists of contacts annually and Bolton makes access changes as needed in addition to the ad hoc changes. The MPOB staff contacts have access to information for all the plans.

Throughout the ensuing months, Bolton team members catalog the populated census requests as they are uploaded and consolidate them for processing. Once the data is compiled, our comprehensive data screening programming checks for unexpected or unreasonable information. Records that fail the screening tests below are sent to a team member for review:

- Basic member information (e.g., name, sex, date of birth, date of hire) is unchanged from the prior year
- No duplicate records
- Dates of birth and hire are reasonable
- Compensation is consistent with prior year; if not, can the change be justified
- Service credit is consistent with prior year; if not, can the change be justified
- Members reported in the prior year who are not reported in the current year are checked
- Active members reported for the first time in the current year with a date of hire more than one-year prior are checked

Following this initial review, we upload to ShareFile questions to the municipalities. We strive to make the submitted questions as clear and concise as possible (relevant information is provided and requested information is highlighted in yellow) to minimize the number of times a municipality is asked to respond to our requests; however, occasionally multiple rounds of questions may be required.

A full reconciliation of status changes is performed to confirm no members were omitted, and this reconciliation is included in our valuation report. The summary statistics that are included in the valuation serve as another check of the reasonableness of the final data set. A second actuarial analyst or actuary reviews the completed data file to ensure nothing was missed.

From July through October, we have regular check-ins, generally weekly, with the MPOB staff. These check-ins have been instrumental in our ability to consistently meet the September 30 deadline for all 53 actuarial valuation reports. We will continue these check-ins under the new contract.

### **Review of Amortization Layers, Methods, and Assumptions**

Before we start the valuation process, the two senior credentialed actuaries will review the amortization layers to determine whether a recommendation should be made to MPOB staff and the Board regarding synchronizing the amortization bases to avoid volatility in accordance with WV Code Section 8-22-20(h). The two senior actuaries will also review other methods, assumptions and report language and determine whether any recommended changes should be made.

### **Valuation Processing**

An actuarial analyst does the initial valuation software programming and an actuary or consultant checks the programming update. An actuary will check the output of several sample members (some active, terminated with a deferred benefit and retired, referred to as “sample lives”). To facilitate our checking process, we’ve created independent and robust Microsoft® Excel models to replicate the individual valuation calculations each year and compare them to the sample life results from our valuation software, ProVal.

As previously mentioned, we also perform an annual gain/loss analysis by plan to identify sources of significant experience that deviate from expectations and affect the measurement of plan liabilities. This allows us to review general plan experience and identify emerging trends in the data that may warrant a more comprehensive experience study.

### Draft and Final Actuarial Valuation Reports

Once the programming has been checked, an analyst assembles the valuation calculations and draft actuarial valuation reports. Our valuation system is flexible enough to allow us to prepare the projections that develop the funding metrics used to select the annual valuation discount rate and immediately feed liabilities determined at the resulting discount rate into the remaining calculations for the current year. Completing both steps in the same program minimizes the number of separate steps in the process and reduces the potential for error.

The calculations and the draft report are checked by an actuary or consultant. An actuary completes a technical review of the calculations and draft report. Then, the signing actuaries complete a review of the report.

Finally, after the valuation is complete, reviewed and ready to provide to the client, a second actuary who has not worked on the case, provides a peer-review of the work to identify any possible areas for improvement in the valuation process and report. Once all levels of review have been completed and signed off, we upload the final valuation report to ShareFile for the municipality and their plan(s).

### Timeline for Annual Valuation

As the incumbent actuarial consultant to the Municipal Pensions Oversight Board since 2019, Bolton has developed and refined a proven annual valuation cycle that aligns with MPOB's statutory deadlines and operational needs. The RFP provides the schedule used for the past several years. We have also provided alternative schedules for consideration to the MPOB. Throughout the valuation cycle, with a heavy emphasis on the July through October timeframe, Bolton and the MPOB staff have regular and consistent check-in meetings. Bolton actuaries provide the agenda prior to the meetings to help facilitate the discussion of current tasks.

### Quality Assurance

We maintain a rigorous, multi-tiered quality control framework to ensure that all deliverables comply with applicable legal and regulatory requirements, conform to the Actuarial Standards of Practice (ASOPs), and exceed client expectations. Our quality assurance process includes:

- **Do/Check/Review Protocol** – Every deliverable undergoes a structured process in which work is independently checked by a second analyst or actuary. This ensures accuracy and provides the MPOB with multiple team members who are familiar with your plans. Final reviews are conducted by a lead consultant to ensure clarity, consistency, and compliance.
- **Sample Testing and Validation** – We independently model sample participants to validate the outputs of our actuarial software, ensuring that results align with expectations and statutory requirements.
- **Project Management Tools** – We use detailed checklists and tracking logs to monitor project status, staff accountability, and adherence to deadlines. These tools are essential for managing the complexity of 53 plans and ensuring timely delivery of all valuation and GASB reports.

- **Peer Review** – All work products are reviewed by a senior consultant to ensure compliance with ASOPs, reasonableness of assumptions and results, and alignment with MPOB-specific requirements. We also evaluate whether our recommendations reflect best practices and innovative thinking.

Our approach to quality assurance is deeply integrated into our service delivery model for the MPOB:

- We have a dedicated and consistent team (Jim, Jordan, Alan, and Janice have worked on all facets of the MPOB engagement for many years).
- We maintain organized, plan-specific files and a centralized tracking system to monitor data collection, identify missing information, and follow up with municipalities as needed to ensure timely completion of valuations.
- Our valuation process is designed to leverage the commonalities across the 53 plans while allowing for customization where needed. We use flexible reporting tools and valuation software to streamline production and ensure consistency.
- We customize our valuation reports to address the unique statutory and policy considerations of the MPOB, including the application of different funding methodologies and the rationale for selected discount rates. Draft templates are shared with the MPOB for feedback prior to final production.
- Each valuation and GASB report is subject to a comprehensive review to ensure completeness and accuracy. The annual consolidated actuarial report is also reviewed using this process.

## SECTION 4, SUBSECTION 4.2.1.2. GOAL 2

The consultant should prepare an annual consolidated actuarial report to present to the West Virginia Legislature's Joint Committee on Pensions and Retirement. This report should comply with all ASOPs, including the sections of ASOP 4 and ASOP 51 mentioned in 4.2.2.1 Goal 1 above. Through mutual discussions with the MPOB, the report's design and data compilation is to be determined. The ten (10) most recent annual consolidated actuarial reports can be viewed at the following link: <https://mpob.wv.gov/actuarialreports/Pages/default.aspx> The annual consolidated actuarial report for the Joint Committee on Pensions and Retirement is due by November 1st of each year. The presentation of the report may require an onsite visit to Charleston, WV to provide the report to the MPOB members and/or a meeting of the WV Legislature's Joint Committee on Pensions and Retirement. Preparing such a report should be included in the "cost of the annual valuation of 53 plans", however time for the presentation would be billed on an hourly basis.

For every valuation year since we were retained as actuary for the MPOB, we have produced a comprehensive, insightful, and timely<sup>1</sup> consolidated actuarial report which provides several key results by plan and summaries of results in total for all plans. Most of the exhibits and statistics presented in the valuation reports for each of the plans are presented in the consolidated actuarial valuation report, except they are often presented in total in the consolidated actuarial valuation report as that report is designed to be a summary of the individual valuation reports.

The consolidated actuarial valuation report complies with all applicable ASOPs and generally includes the same type of exhibits and commentary pertaining to ASOPs 4, 51, and 56 as described in our response to Goal 1 but presented in summary fashion. For instance, rather than showing the full development of the contribution by plan and funding policy, the consolidated report displays by plan and by funding policy the key valuation metrics (liability, assets, normal cost, etc.) and the funding policy contribution result (rather than the full development of the contribution). Similarly, 40-year projections are not shown by plan, but rather graphs of projections display the aggregate effect of switching funding policies for all plans using Alternative or Conservation funding policies.

Beyond what is included in the valuation reports for each of the plans, the consolidated actuarial valuation report also provides:

- **Historical information over a 5-year period:** estimated contributions, payment toward the unfunded liability, liability, assets, unfunded liability, and funded percentage
- **Historical information over a 10-year period:** the number of plans using each of the funding policies and the projected funded status by funding policy
- **Experience analysis:** including commentary on the actuarial health of the plans
- **Results of DROP studies:** retrospective (every five years as required by WV Code) and prospective DROP analyses performed during the valuation year
- **Changes in discount rate**
- **Conclusions and recommendations**

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<sup>1</sup> For the consolidated actuarial valuation report as of July 1, 2021, the final assets for one of the plans were not submitted to Bolton or the MPOB by November 1, 2022. As such, Bolton published a preliminary report (using estimated assets for the plan) the very next day (November 2, 2022) and produced a final consolidated report after receiving the final assets for that plan.

As valuations for each of the 53 plans are completed, results are logged into a centralized database, which feeds into the development of the annual consolidated actuarial report. This master report is updated in real time to reflect changes in assumptions, plan provisions, or funding methods. Once all valuations are finalized, we populate the consolidated report with updated figures and narrative analysis, following the same rigorous review process used for the individual valuation reports.

A draft of the consolidated actuarial valuation report is sent to the MPOB for review. After incorporating the necessary comments from the MPOB, we publish the final consolidated actuarial valuation report.

Our team is experienced in presenting valuation results and discussing emerging issues with the MPOB and its stakeholders. We take pride in our ability to filter out the minutia and focus on what matters, delivering results in a clear and concise manner. We have and continue to attend all Board meetings. Typically, we present preliminary results to the Board at the September Board meeting and final results at the December Board meeting. During those presentations, we cover current year results, contribution projections, and broader topics such as changes in actuarial standards, legislative developments, and emerging best practices.

Barring any unforeseen roadblocks, at least one member of our team will attend every quarterly Board meeting and, in most cases, the two most senior actuaries will attend every meeting. While we have not presented to the WV Legislature's Joint Committee on Pension and Retirement (the "Committee"), we will be available to present to the Committee in person in addition to the four quarterly MPOB meetings.

## SECTION 4, SUBSECTION 4.2.1.3. GOAL 3

**To find a consultant who understands the unique nature of very small municipal pension plans governed by statutes, some of which are actuarially sound and some of which are not actuarially sound. The consultant should be prepared to provide advice to the MPOB on what changes might be made to provide the groundwork for quality pension funds.**

Bolton has extensive experience working with small municipal pension plans, many of which face unique challenges due to limited administrative resources, statutory constraints, and varying levels of actuarial soundness. Although our client base represents a very broad spectrum of plans, from small municipalities to large cities and states, many of our clients have small to mid-sized plans (under 1,000 participants). Since 2019, we have partnered with the MPOB to support the 53 municipal policemen's and firemen's pension and relief funds. Given our extensive involvement through this engagement, we are very familiar with West Virginia Code (WV Code) §8-22-16 through §8-22-28 governing these plans as well as §33-3-14d governing the premium tax allocation.

We emphasize in the valuation reports each year that the Alternative and Conservation funding policies are not based on actuarial principles and practices and may result in substantial increases to city/town contributions. Multiple municipalities and pension boards using either of these funding policies have contacted Bolton for additional analysis and discussion. Over our tenure as actuary for the MPOB, the number of plans using either of these two funding policies has decreased substantially (Alternative from 20 to 12 and Conservation from 5 to 0).

Furthermore, we have brought the following issues and mitigating solutions to the MPOB's attention over the past several years:

- **Amortization Policy to Limit Exposure to Extreme Volatility** – When we began our engagement with the MPOB, the Standard (including Optional from Standard) and Optional funding policies under WV Code used a single, declining amortization period. We noted in our *2020 Experience Study and Actuarial Methods Recommendation Report* that required contributions under this amortization policy would be susceptible to large annual fluctuations as the amortization period continued to decrease. As such, we (1) recommended a switch to a layered approach to the amortization policy to mitigate that volatility and (2) helped the MPOB craft language enacting this change, which passed in the 2021 legislative session.
- **Calculation of Survivor Benefits** – Through our transition as actuary for the MPOB into the first valuation year, we recognized the complicated reindexing provisions of the WV Code and worked with the MPOB to develop a standardized calculator for all municipalities to use when determining the initial benefit amounts owed to surviving beneficiaries. We also identified issues where the survivor benefits were not being determined in accordance with WV Code and have assisted in making these corrections.
- **Switch from the Conservation Funding Policy** – When we began our engagement with the MPOB, plans using the Conservation funding policy did not have the option to switch to a different funding policy under WV Code. Although the MPOB was aware of this issue, we reiterated it as a recommendation beginning with the first consolidated actuarial valuation report that we published for the MPOB. During the 2023 legislative session, a bill was passed to allow plans using the Conservation funding policy to switch to the Optional or Optional II funding policy. All plans that were using the Conservation funding policy have since switched to the Optional or Optional II funding policy.

- **Discount Rate Consistency for Standard, Optional, and Optional II Funding Policies** – Several plans have switched from either the Alternative or Conservation funding policies to one of these actuarially-based funding policies. To promote a more stable contribution pattern and make it more feasible for non-actuarially sound plans to switch to an actuarially sound policy, we made a recommendation to the Board this year that the discount rate matrices for the actuarially-based funding policies should not be based on funded status.

We understand the challenges that the pension boards and municipalities have in calculating accurate benefits for their participants. To this end, we have also had discussions with the MPOB about putting the plans on Bolton’s online pension portal. The pension portal could be designed to give members the ability to run pension benefit estimates and to allow municipal contacts to run final benefit calculations. Using a centralized portal would promote consistency between the calculation of benefits for all plans and likely would improve accuracy.

As mentioned throughout this proposal, we have developed collaborative relationships with the MPOB, municipal contacts, and pension board secretaries. This experience has given us a deep understanding of the operational realities and financial pressures facing these pension systems. Our goal has been and continues to be helping the MPOB not only to monitor the health of each plan but also to lay the groundwork for long-term improvement—ensuring that even the smallest plans are positioned to meet their obligations to retirees and beneficiaries. Bolton’s experience with small plans, strategic recommendations, and policy and legislative guidance have paved the path for supporting that goal.

## SECTION 4, SUBSECTION 4.2.1.4. GOAL 4

In the spring/summer of 2026 and in the spring/summer of 2029, the consultant should assist the MPOB in determining what the actuarial assumptions should be for the annual actuarial valuations. The consultant would use the MPOB's Standard Operating Procedures, Procedure Title: Experience Study Timing adopted June 15, 2017 to conduct the study. This Procedure is listed on the MPOB website <https://mpob.wv.gov/forms/Pages/Procedures.aspx>. The most recently completed experience study, completed in July 2023 and titled "2023 Experience Study Implemented Fall 2024 Valuations" can be found n the MPOB website at: <https://mpob.wv.gov/about/Pages/default.aspx>

Through our current engagement with the MPOB, we have successfully completed two experience studies:

- Using 2014 – 2017 data and from which the recommended assumptions were first implemented in the actuarial valuations as of July 1, 2020 that determine the required contributions for the fiscal year ending June 30, 2022.
- Using 2017 – 2020 data and from which the recommended assumptions were first implemented in the actuarial valuations as of July 1, 2023 that determine the required contributions for the fiscal year ending June 30, 2025.

Bolton is fully prepared to conduct the upcoming actuarial experience studies (2026 and 2029) in accordance with the MPOB's Standard Operating Procedures, specifically the procedure titled *Experience Study Timing*, adopted June 15, 2017. Consistent with our prior studies, the experience studies will include:

- **Data Analysis and Review:** We will analyze demographic experience (mortality, retirement, termination, disability, salary scale, and survivor benefit assumptions) and economic experience (inflation, cost-of-living adjustment, investment return, payroll growth, and premium tax increase) across all 53 municipal pension and relief funds. Our analysis will be segmented by plan type (police versus fire, as warranted by differences in experience) and size to ensure assumptions are appropriately tailored. Segmenting the results between police and fire was implemented by Bolton in the 2019 study.
- **Assumption Testing and Recommendations:** Using industry-standard actuarial techniques and ASOP 27 (Selection of Assumptions for Measuring Pension Obligations) guidance, we will compare actual experience to current assumptions and recommend updates where warranted.
- **Draft Report for MPOB Review:** We will present preliminary findings to MPOB staff and incorporate feedback before finalizing recommendations. As with our two prior studies, we will present the results to the MPOB in graphical and table format and, if requested, to the West Virginia Legislature's Joint Committee on Pensions and Retirement.
- **Documentation and Transparency:** The final experience study report will clearly document the methodology, data sources, assumptions tested, results, and rationale for any recommended changes.

Our detailed approach for experience studies is documented in our prior experience study reports. A summary of that approach, which follows directly below, remains largely unchanged from that detailed in our 2018 proposal for this engagement:

## Assumption Selection Philosophy

Assumptions do not impact the true cost or the ultimate cost of the pension plan. Instead, assumptions impact the timing of when contributions are made to a pension fund or when costs are recognized for accounting purposes. The true or ultimate cost of a pension plan is represented by the following formula:

$$\text{Cost (i.e. Contributions)} = \text{Benefit Payments} + \text{Expenses} - \text{Actual Investment Return}$$

The benefit payments, expenses and actual investment returns will be the same regardless of what assumptions are used to value the liabilities of the pension plan. Actuarial assumptions are used to determine a liability, normal cost, and an annual contribution (excluding the Alternative funding policy) each year and make “educated guesses” as to what future benefit payments and investment returns will be.

To the extent that the assumptions are too aggressive or optimistic, the plan will experience losses over time and required contributions may increase over time (as a percentage of pay). To the extent that the assumptions are conservative or pessimistic, the plan will experience gains over time and the required contribution will decrease over time (as a percentage of pay).

While we believe that past experience is often a reasonably good measure of demographic assumptions (such as retirement, employee termination, disability, and the merit portion of salary improvement), economic assumptions (inflation, the inflation portion of salary improvement, cost-of-living adjustment, and investment returns) are often better based on current economic data and the expectation of future conditions implicit in that data.

## Economic Experience Study Process

### Inflation Assumption

The inflation assumption is at the heart of the economic assumption set, as it is used as a starting point for all the other economic assumptions, including the investment return assumptions, salary improvement, cost-of-living adjustments (COLAs), and the increase in the premium tax allocation. Thus, our analysis starts with the inflation assumption.

We analyze the inflation assumption from various perspectives:

- Past experience – based on the Consumer Price Index for all Urban Consumers (CPI-U) over the last 5, 10, 15, 20 and 25 years
- Current expectations of future experience – based on investment advisors’ analysis of future expected inflation

### Investment Return Assumption

The single assumption that has the largest effect on the determination of plan liabilities, funding levels, and contributions is the investment return/discount rate assumption.

While we typically suggest an investment return assumption based on the best estimate of the future investment return, reflecting investment advisors’ investment return expectations and the plan’s investment mix, we also recognize the value of choosing conservative investment return assumptions, trying not to assume the market meets expectations but to choose a return more likely to be exceeded than to not be met. Beyond getting information from the plan’s investment advisors (when available), we also look at published data from other investment advisors and the NASRA surveys.

Because the 53 plans supported by the MPOB reflect a range of funding levels, with varying asset allocations and investment policies, different valuation interest rates are used based on a formula taking into account a variety of factors, such as target asset allocation for actuarially sound funding policies, and current and projected funded status for non-actuarially sound funding policies.

### **Salary Increase Assumption**

In addition to inflation, we work with a plan sponsor to understand their current and expected future merit pay structure, including the geographic location, and career progression. Selection of the merit increase component, more than any other economic assumption, is often informed by reviewing past experience and modifying it appropriately for any anticipated changes in the plan sponsor's workforce or compensation structure.

### **Other Economic Assumptions**

We work with the MPOB to develop and agree upon other economic assumptions (such as cost of living increases) that appropriately model plan provisions and meet the consistency requirements of ASOP 27.

### **Demographic Experience Study Process**

We have a proven process for preparing the experience metrics used to evaluate a plan's current actuarial assumptions against actual past experience. For smaller plans where there is not fully credible data, some assumptions may ultimately be set by reference to a standard, industry table. This is particularly true for the mortality assumption, which the MPOB commits to marking to the latest available data on mortality rates and projections of future improvement.

Our typical experience study process is described below.

**1. Compile historical data:** It is important to ensure the annual data for each valuation year is in a consistent format to allow accurate tracing of individual participant status and the progression of compensation amounts year over year.

**2. Review data on a standalone basis:** After appending the new data, the next step will be to identify outliers, missing data, and data inconsistent within the database.

**3. Adjust prior data to account for new information:** For example, if an employee was classified as a service retiree in the 2022 and 2023 data but is a disability retiree in the 2024 data, we will modify their status from a service retirement to a disability retirement.

**4. Documentation:** Documentation of the actions taken to adjust any historical data for consistency with the current year is critical to being able to trace the data from its source.

**5. Run queries to determine actual-to-expected ratios:** This will require the calculation of the number of exposures, the actual number of employees that decrement via retirement, turnover or other reasons, and the expected number of employees that decrement which is determined by multiplying the current assumption by the relevant exposure.

**6. Determine if change is necessary:** The following factors will be considered:

- Is the most recent experience consistent with the assumptions, and if not are the differences credible?
- Is experience over a longer time period consistent with the assumptions, and if not are the differences credible?
- What factors, if any, were unusual during the period in question?
- Has the recent economic environment changed the experience, can these changes be expected to continue?

- Have there been any changes to benefit provisions (such as the addition of a DROP) or administrative practices, such as in how disability programs are administered, that might affect future demographic experience?
- How should the results of the prior experience studies be taken into consideration?

**7. Make recommendations:** Based on the experience study, we will make recommendations for revisions to the assumptions.

**8. Prepare summary tables of impact:** We will prepare summary tables to allow for easy comparisons of current to proposed assumptions and the estimated impact on each plan.

## SECTION 4, SUBSECTION 4.2.1.5. GOAL 5

**To find a consultant to assist the MPOB by providing written recommendations which include methods for monitoring pension and relief funds and methods for assuring prudent administration of the funds.**

Over the past seven years, we have provided the following support to the MPOB for assuring prudent administration of the funds under the oversight of the MPOB:

- Streamlined census data collection and facilitated the safe and easy transfer and storing of information via ShareFile.
  - Requested and collected additional information for surviving beneficiaries to assist in the calculation of survivor pension benefits.
- Developed a survivor benefit calculator for municipality use to accurately capture the reindexing provisions of §8-22-26(a).
- Assisted in the review and documentation of historical COLAs by plan.
- Standardized asset collection templates and added checks and balances to encourage proper population of fields by municipalities.
- Shared and discussed relevant industry documents as they have been published, such as the Conference of Consulting Actuary's (CCA) second edition of *Actuarial Funding Policies and Practices for Public Pension Plans* (for which Jordan McClane was one of the authors) and the American Academy of Actuaries (AAA) issue brief *Improving Spousal Retirement Plan Protections – Gaps and Policy Proposals*.
- Provided template QDROs to promote consistency in construction and administration.
- Prepared a record-keeping document for cities administering a DROP.
- Presented the option of using Bolton's online pension portal. Using a centralized portal would promote consistency between the calculation of benefits for all plans.
- Provided a proposal for studying changes to the plan design to make the benefits simpler to calculate.

Projects we would recommend for future consideration would be as follows:

- Review the determination of survivor benefits and how the supplemental benefits are redetermined for survivors to make the benefits easier to calculate.
- Revisit the plan design proposal with a focus on how to simplify the determination of the final average earnings component of the benefit.
- Explore a centralized benefit calculation center to improve the accuracy and consistency of benefit calculations.

Clients tell us that these characteristics are of value to them, and we work every day to make sure we meet and exceed these expectations:

- **Listen before we advise.** Each client and each organization have their own set of issues and challenges that need to be solved. We listen to what clients need, seek to understand their culture and business, and work hard to imagine how an idea will work in their situation.

- **Solve specific problems.** We examine the data to understand the plans. This allows us to pinpoint problems and leverage the appropriate resources.
- **Garner trust and openness.** These characteristics are driven by honest, transparent, personal relationships. We look for and encourage straight talk and work to earn your trust.
- **Be proactive.** We thoughtfully bring reasonable ideas and solutions to the problems at hand and recognize that part of our value is to 'see the future' and lead with both innovative and proven solutions that will work.
- **Ensure compliance.** We ensure that our clients are aware of all applicable compliance and legislative requirements.

## SECTION 4, SUBSECTION 4.2.1.6. GOAL 6

**To find a consultant to assist the Board by providing written recommendations to the MPOB so that it could give the WV Legislature and local municipal plans direction on strengthening and protecting plan assets in the interest of plan members.**

Over the course of our contract, we have provided the following written procedures and processes for the MPOB to provide the WV Legislature and the local municipal plans:

- Guidance on considerations for DROP recordkeeping.
- Information on prospective DROP costs.
- Information on retrospective DROP costs.
- Training sessions to pension secretaries on the information contained in the actuarial reports.
- We are currently working on a document to provide information on the change in survivor benefits due to the recent recalculation project.

In the first consolidated actuarial valuation report that we prepared for the MPOB, we made the following four recommendations:

1. Discourage the use of the Alternative and Conservation funding policies as these funding policies result in expected future contributions which are much higher than current contributions and are expected to create a larger burden in the future for the municipalities that fund under these policies.
2. The legislature should change the State Code to allow municipalities that use the Conservation funding policy to switch to the Optional funding policy.
3. Consider implementing a minimum amortization period for the Standard and Optional funding policies of 15 to 20 years, including a layered amortization approach. Currently these funding policies use an amortization policy in which a single unfunded liability base, attributable to all sources, including investment experience, demographic gains and losses, assumption changes, and plan changes, is amortized over a set number of years (for the July 1, 2018 valuation, 13 years for Standard plans and Optional from Standard plans, and 31.5 years for Optional from Alternative plans) which decreases each year, until eventually all unexpected changes in the unfunded liability are recognized immediately. Given that the funded position of the plans may experience material changes due to investment experience, demographic experience, assumption and plan changes, changes in the unfunded liability could have a significant impact on the required contributions using this policy, especially for years in which the amortization period has dwindled to only a few years or immediate recognition. To help mitigate these large fluctuations, we recommend implementing layered amortization bases with an initial amortization period of 15 to 20 years, such that new bases are created each year for changes in the unfunded liability and are recognized over a minimum number of years.
4. Review the feasibility of pooling investments for these plans to reduce investment expenses and increase net investment returns.

Since the issuance of that report in October 2020, we have worked with the MPOB to accomplish the following:

1. Emphasize in the valuation reports each year that the Alternative and Conservation funding policies are not based on actuarial principles and practices and may result in substantial increases to city/town contributions. Multiple municipalities and pension

boards using either of these funding policies have contacted Bolton for additional analysis and discussion. Over our tenure as actuary for the MPOB, the number of plans using either of these two funding policies has decreased substantially (Alternative from 20 to 12 and Conservation from 5 to 0)

2. Worked with the MPOB to craft legislation (introduced and passed in the 2023 legislative session) which allowed plans using the Conservation funding policy to switch to the Optional or Optional II funding policy.
3. Worked with the MPOB to craft language (introduced and passed in the 2021 legislative session) to use layered amortization by source for the Standard and Optional (and now, by extension, Optional II) funding policies.
4. Over our tenure as actuary for the MPOB, the number of plans pooling investments through the West Virginia Investment Management Board has increased from 1 to 16.

Through the dedicated efforts of the MPOB and WV Legislature, our recommendations have become reality. We are both proud and thankful to have been a part of that journey.

## SECTION 4, SUBSECTION 4.2.1.7. GOAL 7

To find a consultant to assist the Board by reviewing any municipality's DROP (Deferred Retirement Option Plan) proposal received by the Board, as authorized in WV Code §8-22-25(a), and to provide a report on said plan to the Board. The consultant's review includes the elements of the DROP and the actuarial projections of the impact of the DROP on the affected pension and relief fund. Pursuant to W.Va. Code §8-22-25a(e), "The oversight board shall annually report to the Legislature's Joint Committee on Pensions and Retirement, and to the Legislature as required by §4-1-23 and §5-1-20 of this code, on DROPs submitted to the board for approval and the status of any DROP that has been approved. Once every five years, the oversight board shall have its contracted actuary provide a report to the Legislature's Joint Committee on Pensions and Retirement on the status of each active [DROP]. The reports shall include any experienced impact on an affected pension and relief fund." Pension plans for which the MPOB provides oversight that have enacted DROPs are as follows:

- Beckley Fire
- Beckley Police
- Clarksburg Fire
- South Charleston Fire
- Vienna Police
- Wheeling Fire

Over the past seven years, we have performed 10 retrospective DROP studies and 8 prospective DROP studies for the MPOB in compliance with WV Code §8-22-25(a) and have summarized the results of these studies in the applicable year's consolidated actuarial valuation report for use by the MPOB and the Legislature's Joint Committee on Pensions and Retirement. Each year, the retrospective studies were performed in the summer after receiving the valuation census data to incorporate in the study, while the prospective studies were generally performed by the next Board meeting after receiving the DROP study request.

For the first three valuation years of our engagement (reports sent in fall 2019, 2020, and 2021), we produced an annual letter to the Legislature's Joint Committee on Pensions and Retirement summarizing the status of each DROP in effect. Over those three years, there was not much change to the DROP impact for each plan from year to year, so we recommended that they only be provided every five years. That recommendation was codified as a requirement in WV Code. The next summary report to the Legislature is due in the fall of 2026.

The WV Code specifies that the DROP analysis should be performed from the perspective of the fund. This perspective differs from most of the DROP studies required by other plan sponsors which instead focus on the impact to the sponsor. In the September 2020 Board meeting, we presented three different approaches to valuing the impact of the DROP to the MPOB. Although only one of the approaches is ultimately used to determine whether the DROP is expected to not have a negative impact on the fund, we display the results of all applicable approaches in our analyses for context.

The DROP analyses for the MPOB have an additional consideration that is unique to these plans: the premium tax allocation. Given that premium tax allocations among the 53 plans are dependent upon headcount (base allocation based on all members, excess and expired re-

allocation based on active headcount), whether a member is active or retired and replaced by a new hire will impact the allocation. Our modeling has taken this into account for every DROP study that we have performed for the MPOB.

Each prospective DROP study is very robust and includes the following:

- Cover letter
- Summary of cost/savings
- Proposed DROP provisions
- Methods and assumptions
- Explanation of the components of calculations
- Sensitivity – results using a different basis
- Observations and conclusions

To our knowledge, retrospective DROP analyses had not been performed prior to our engagement with the MPOB. For consistency, the retrospective template that we created generally follows the same format and structure as the prospective analyses but are calculated at a different point in time: after the DROP has been implemented, rather than prior to DROP implementation. The retrospective analyses help answer the question of whether the DROP has had a greater or lesser impact on the fund than anticipated.

We believe that our DROP analyses and presentations to the MPOB have helped the Board better understand how DROPs can impact plans and results.

We are experts on DROPs, which come in various shapes and sizes. Most of our public sector clients have at least one plan with a DROP provision and, like the work performed for the MPOB, we conduct DROP analyses and have designed sophisticated coding to accurately reflect all necessary components in our valuation system and projections. Jordan McClane and Tom Vicente have presented on DROPs at the Annual Conference and Exhibition for the National Conference on Public Employee Retirement Systems.

Our deep knowledge of DROPs traces back to our founder, Robert Bolton, who co-authored a paper on DROP designs with Bolton's prior Chief Actuary, Tom Lowman. The paper is considered one of the primary actuarial reference materials on these programs. Bolton's expertise on the workings of these programs and the broader cost implications allows us to provide clients with a comprehensive analysis of whether a DROP program meets their cost neutrality criteria.

## SECTION 4, SUBSECTION 4.2.1.8. GOAL 8

**To find a consultant that would be available to provide individual sessions to each municipal policemen's and firemen's pension and relief fund through conference calls, virtual meetings, or on-site regional meetings where individual pension boards of trustees could speak to/meet with consultants to receive information specific to their own actuarial valuation, on an as needed basis. The MPOB holds periodic regional training for boards of trustees. The consultant may be asked to attend these regional events in person or via a virtual meeting platform. Should the consultant be asked to attend any of these events or participate electronically, the time is to be billed on an hourly basis using the hourly rates quoted on the cost sheet.**

Over the current engagement period with the MPOB, we have conducted multiple in-person trainings in West Virginia. We have also attended every Board meeting (with the exception of those impacted at the onset of COVID) in person. Furthermore, we have contracted with several individual municipalities to perform additional analysis and have presented those findings in person. We believe that our dedication to in-person attendance coupled with our responsiveness and availability has been a major factor in building our trusted relationship with the MPOB.

We have assisted several municipalities with changing from the Alternative or Conservation funding policies to the Optional or Optional II funding policies. Recently we assisted Fairmont, Martinsburg, and Morgantown. Of note, we made a few trips to Morgantown to meet with staff and their city council and worked closely with their police and fire pension boards. We also met with the pension board representatives and the city council virtually. We were able to help the city and the police and fire participants reach a reasonable approach for managing the plans in the future.

As consulting actuaries, subscribing to this philosophy of attentiveness should be standard in the industry; however, many plan sponsors have found that it is not, particularly in this post-COVID era of the hybrid workplace. At Bolton, we have found this to be a differentiator for us compared to many of our competitors. As a small-to-medium sized, privately-held company, Bolton is not beholden to shareholders. Instead, our success is defined by our clients' satisfaction. Being available and engaged are part of Bolton's core values, empowering Bolton's actuaries to consistently provide the level of service warranted to fully support the boards and trustees entrusted with protecting pension benefits.

To this day, Jim Ritchie and Jordan McClane go into the Bolton office every workday; opting for a space to collaborate with colleagues rather than an in-home office. Jim and/or Jordan will continue to attend all events in person and will continue to be available to provide individual sessions to each municipal policemen's and firemen's pension and relief fund through conference calls or on-site regional meetings. Together they have over 50 years of combined experience consulting with pension plan sponsors. Additionally, they are frequent speakers on a variety of pension and retirement-related topics at actuarial meetings and other industry conferences and are accustomed to speaking to various audiences, both in-person and via the phone or web.

## SECTION 4, SUBSECTION 4.2.1.9. GOAL 9

**To find a consultant that is prepared to design a new retirement formula, if asked, that does not diminish current benefits but that is easier for the participants to calculate retirements and disability retirements than what is required currently in W.Va. Statutes and Title 211, Series 1 of State Rules. WV Code §8-22-16d defines the terms "salary or compensation" and specifically provides a very detailed and often confusing definition. The MPOB anticipates the winning vendor will be asked to design a new retirement formula for any police officer or firefighter who has not retired. The formula would have to result in a retirement amount that does not diminish current benefits and that could be written into the WV Code for all future retirees. The bidder should describe in some detail how this process would occur should they be selected as the winning vendor. This goal/objective would be billed on an hourly basis.**

Over the course of the current engagement, Bolton has been prepared to assist the MPOB in designing a new retirement formula that simplifies benefit calculations for police officers and firefighters while preserving the value of current benefits. We have drafted various considerations and initial alternatives to the current design for the MPOB's consideration.

Our general approach to plan design was outlined in our prior proposal and is restated below for reference. The main items of focus would be the definition of final average earnings and the determination/re-determination of the supplemental benefit for beneficiaries. We understand that these two features are the most challenging for the municipalities and Pension Boards to understand and administer.

The concern that the terms "salary" or "compensation" can be detailed and confusing at the same time is a common problem for which there may not be a magic bullet. Concerns over the inclusion of overtime pay (a.k.a. spiking of pay near retirement) often makes this an untenable definition. It is not uncommon for a public sector employer to have 100 pay fields in their payroll system, ranging from clothing allowances to severance pay. The MPOB plans have a lot of employers and probably numerous payroll systems that are not uniformly structured in how they track various pay fields.

In terms of simplifying formulas, we can help with identifying alternative ways of defining compensation and final average earnings for pension administration purposes that will make it easier for each municipality to determine which elements of pay to include or exclude. We have also talked with the MPOB about our Online Pension Portal (discussed in other sections and summarized again on the following page). From a member perspective, the Portal often simplifies calculations and allows members to perform their own scenario modeling to improve understanding of how future pay increases, retiring early versus later affects the amount of their monthly pension payments.

The common trade-off with simplifying formulas is the age-old issue of preserving legacy provisions to be sure few if any members get less and different perspectives on fairness in plan design without creating too much extra cost to the plans. At Bolton, we work with our clients to look at all aspects of a retirement program to help clients develop a comprehensive program that balances competing objectives. We will work with you to design a program that more effectively manages costs while providing meaningful retirement income to the member police officers and firefighters.

We will also provide you with sensitivity on the cost impact to help you understand how much risk you have in your retirement program and what the range of possible outcomes could be.

We have worked with more than 250 public sector employers giving us access to a deep resource of benchmarking information. We have compiled benchmarking information on various topics including Police and Fire Plans and Deferred Retirement Option Programs (DROPs). We also utilize publicly available information like surveys published by the National Association of State Retirement Administrators (NASRA) and state oversight groups that collect retirement plan information.

### Plan Design Study Approach

Our customized and proven approach to plan design focuses on the cost, competitiveness and adequacy of your retirement program. You will receive the benefits of our experience helping municipalities balance budget and cost restraints with the plan members' need for an efficient and adequate retirement program.

Your pension plan review and analysis will consist of three phases: Preparation, Analysis, and Decision. A fourth phase, Implementation, will apply if you decide to make material changes to your retirement program.

The **Preparation** phase consists of providing you with education on the current retirement landscape and discussing your specific issues with the goal of determining some specific plan designs to analyze in depth. The **Analysis** phase will be focused on a deep dive into three to five separate plan designs. You will receive details on the cost comparisons of each proposed design, the competitiveness of these designs and the impact on plan members' retirement needs. The **Decision** phase will be focused on fine tuning the analysis for the final one or two proposed plan designs to present to relevant stakeholders and be used for justification for making a final decision. More detail on each phase follows.

#### Preparation Phase

Upfront preparation is key to finding a palatable solution to this very difficult challenge. During the preparation phase you will receive our perspective on the current retirement landscape in the U.S. with focus on public retirement systems across the country. You will be able to provide us with your specific challenges around competitiveness, budget constraints, plan member feedback, ease of administration (particularly the final average earnings and supplemental benefits, or COLA), simplicity and political pressures. You will receive our perspective on common practices as well as new innovative plan designs. Based on your initial discussions with us, we will work with you to develop your guiding principles with the focus on plan cost, competitiveness for talent, plan member retirement adequacy, plan member understanding, and overall program risk. The result of this initial phase is to determine the three to five plan designs that will be studied and to develop the guiding principles that will help determine the plan design that best meets your most important objectives.

#### Analysis Phase

While assumptions do not impact the long-term cost of a pension plan, they will have a significant impact on demonstrating the cost differences for a plan design study. The components of pension cost that can be reasonably estimated are the benefit payments and the expenses.

For the analysis phase, you will receive calculations showing the cost impact of the proposed plan designs compared to the current plan, the retirement adequacy (sometimes viewed as the replacement ratio) for a representative sample of plan members, a graphic that shows a comparison of the proposed benefit to the current benefit for each sample plan member to

show how each member's expected retirement income will be affected by the proposed change, and benchmarking to other municipal employers.

In order to make sure our clients have a complete understanding of the "true" cost of a plan design change, we provide our clients with sensitivity testing around key assumptions, over a multi-year projection period to give a full picture on the potential cost ramification of the plan design changes. The plan change being studied guides us in the selection of key assumptions for the analysis. We can be very sophisticated by providing percentile results under a stochastic projection or more simplistic by doing deterministic projections with two to four future economic scenarios.

You will receive the detailed results in a presentation and we will meet with you to discuss the results. We will also provide you with an analysis of the risk inherent in the proposed options and sensitivity on the projected costs.

### **Decision Phase**

For the decision phase, we will review the final results of changes made from the analysis phase. You will receive final recommendations on the new plan design with justifications for the recommendations. Finally, you will receive our assistance with any final presentation to make to the pension boards, representatives from the State Legislature, and any other relevant stakeholders.

### **Online Pension Portal**

As previously discussed with the MPOB and documented in our responses to the other goals of this proposal, Bolton hosts a secure online system that may be used by benefits staff and plan participants to estimate their retirement benefits and access benefit statements and summary plan descriptions. This offering is unique among our competitors, providing our clients with a powerful tool to help standardize benefit calculation procedures and improve the accuracy of calculations prepared for retiring members. Many clients have found the system to be particularly attractive to streamline the work of their internal human resources staff or to provide members with tools to model potential retirement scenarios.

Benefits staff can perform estimates of retirement benefits and prepare final benefit calculations and retirement packages – all instantly. Plan participants can access information on their personal benefits as well as general information on the plan. This includes viewing benefit estimates at user-selected retirement ages.

Features of the online system include:

- User-friendly design
- Anytime, anywhere access. No special software needed.
- Easily print or save retirement estimates.
- Reflects plan benefits and features, including surviving spouse benefits.

Our online system provides participants with robust information while significantly reducing the time and assistance required from benefits staff. It also provides the ability to standardize the benefit calculations and administrative procedures across all the MPOB plans to ease the burden on the local municipalities – each of which would be able to access the system and continue to support the administration of their own plans – and ensure participants receive accurate information on their pension benefits.

## SECTION 4, SUBSECTION 4.2.1.10. GOAL 10

**To find a consultant to complete special projects as required of the MPOB by the Joint Standing Committee on Pensions and Retirement of the West Virginia Legislature regarding the Plans being valued (such as costs of benefit formula changes, changes in actuarial assumptions, cash flow and funding projections). The frequency and nature of requests from the Legislature are unknown at this writing, however within the past 6 years, there have been such requests, and those requests generally are presented within the 60-day window that is the WV Legislature's regular session and generally are expected to be answered within 3 days when the WV Legislature is in session. Should the consultant be asked to complete a special project as described above, the time is to be billed on an hourly basis using the hourly rates quoted on the cost sheet.**

Over the past seven years as the actuary for the MPOB, Bolton has provided timely proposed legislation impact analysis to the MPOB, with topics ranging from increasing the cap on the supplemental benefits (i.e., cost-of-living adjustments) to including fractional years of service in the calculation of pension benefits. The results letters provided to the MPOB document the provisions of the proposed legislation, summarize the estimated impact on the plans, provide commentary for consideration, describe the analysis performed and methodology used, and detail the data and assumptions underlying the results.

Bolton has extensive experience responding to legislative requests for actuarial analysis under tight deadlines. Our team performs these types of analyses for many of our clients. Notably, Bolton has been the actuary since 2017 for the Maryland Department of Legislative Services (DLS), for which we provide projections of fiscal analysis for bills proposed in the Maryland General Assembly that would affect the Maryland State Retirement and Pension System (MSRPS). Often these requests are completed within a few days to provide adequate time for the policy analysts to prepare for the bill reading. During our contract with DLS, an annual average of approximately 10 bills affecting MSRPS have been sent to Bolton for analysis.

Examples of similar special projects produced for other public sector clients include:

- Cost impact modeling of proposed benefit formula changes
- Sensitivity testing of actuarial assumptions
- Long-term funding and cash flow projections
- DROP evaluations

We understand the urgency and precision required when supporting the Joint Standing Committee on Pensions and Retirement, especially during the compressed 60-day legislative session. For the MPOB engagement, our team has made significant investments in coding adaptable modeling and valuation software given that there are 53 different plans. These projects often require not only technical expertise but also the ability to communicate complex actuarial concepts in a clear and concise manner. Our consultants are adept at preparing materials suitable for legislative review and public dissemination.

## SECTION 4, SUBSECTION 4.2.1.11. GOAL 11:

**To find a consultant to the MPOB, as is provided for in §8-22-20a(b), which demonstrates the capacity and flexibility to complete special projects which support the MPOB's mandated responsibilities as set forth in §8-22-18a(a)(1). These projects may arise on an ad hoc basis and require timely execution, responsiveness, and alignment with MPOB's strategic priorities. The vendor must be available to initiate and deliver such projects upon request, subject to mutually agreed timeliness and scope. Should the consultant be asked to complete a special project as described above, the time is to be billed on an hourly basis using the hourly rates quoted on the cost sheet.**

As stressed throughout this proposal, Bolton's actuaries have built extremely flexible and robust models given the nature of this engagement. Doing so was a top priority for Bolton as we transitioned into the role of the MPOB's actuary in 2019. Beyond the legislative requests mentioned in our response to Goal 10, the DROP studies outlined in our response to Goal 7, and the recommendations and subsequent analysis detailed in our responses to Goals 1, 3, and 5, Bolton has been engaged by the MPOB for several special projects, including analysis on topics such as:

- Overpayments and recoupments for plans that have overpaid retirees
- Pension obligations bonds
- The impact of other funding policies

Also worth noting is the responsiveness and timely updates made to the July 1, 2023 actuarial valuation reports and results. After Bolton completed all 53 actuarial valuation reports by the September 30, 2024 deadline, an update to the premium tax allocations was sent to Bolton. The MPOB was very quick to act upon discovering the update to the allocations and the Bolton team responded in lockstep. After receiving the updated allocations on October 9, 2024, Bolton reproduced results for all 53 plans, worked with the MPOB to craft letters, and published addendums to the valuation reports for all plans by October 25, 2024. This swift response was critical to ensuring plans received the correct premium tax dollars for that year.

Bolton is fully prepared to continue supporting the MPOB with these ad hoc special projects that align with its statutory responsibilities under §8-22-18a(a)(1). Given our current engagement with the MPOB, our entire current team (resumes provided in 4.3.1.3) is very familiar with the MPOB plans and thus able to respond quickly to these requests. Beyond the current team, Bolton maintains a bench of credentialed actuaries and analysts who can be deployed as needed to support special projects without disrupting core valuation work. We are accustomed to working under compressed timelines and ambiguous scopes, and we bring a structured yet agile approach to each engagement.

## SECTION 4, SUBSECTION 4.2.1.12. GOAL 12:

To find a consultant to provide a supplemental valuation report, in addition to the annual actuarial valuation report, containing Governmental Accounting Standards Board (GASB) statement number 67 and statement number 68 information for each of the 53 municipal pension plans for each of the fiscal years of the contract. The consultant should refer to the timeline set forth in Section 4.1 for work to be completed each year within the RFP response. GASB reports that have been produced to date are on the MPOB website, <https://mpob.wv.gov/actuarialreports/Pages/default.aspx>.

Bolton has extensive experience preparing GASB 67 and GASB 68 supplemental valuation reports for public sector pension plans of all sizes. We currently provide GASB reporting services to over 100 public entities, including municipalities, counties, and state agencies. Our team is well-versed in the nuances of GASB compliance and has developed streamlined processes to ensure timely, accurate, and audit-ready reporting.

As we have over the past seven years, we will continue to prepare GASB 67/68 reports for each of the 53 municipal police and fire pension plans overseen by the MPOB, using the following schedule:

- **August 1:** Asset data request issued to municipalities
- **August–October:** Asset data received and reviewed
- **October–December:** GASB reports issued
- **December 31:** Target completion date for all GASB reports

We use ProVal for liability modeling and a proprietary reporting engine that we built specifically for this engagement to ensure GASB exhibits are generated consistently and accurately for all 53 plans. Our secure portal, ShareFile, allows municipalities to securely upload asset data and track submission status.

## **SECTION 4, SUBSECTION 4.2.1.13. GOAL 13:**

**To find a consultant to provide any additional GASB required reports which may or may not be contemplated at the time of this request for proposal. Future GASB requirements would be additional work implemented through amendments to any contract issued to the successful bidder on this request for proposal.**

Bolton is fully prepared to support the MPOB with any future GASB reporting requirements that may arise during the term of the contract. At Bolton, we believe it is critically important for our senior actuaries to be actively engaged members of the actuarial profession. Our involvement within the U.S. actuarial organizations allows us to stay “plugged in” to the latest developments and proposed changes in laws, regulations, actuarial practice standards, and financial reporting standards applicable to public pension plans. Our team closely monitors developments from the Governmental Accounting Standards Board (GASB).

During the release of GASB Statements 67 and 68 (Pension Accounting Standards), we provided educational seminars to our clients and professional organizations. We also provided our clients with pro forma templates to help identify any questions or reporting information prior to the audit. Our actuaries have provided educational sessions on GASB at the state-wide annual conference for the Virginia GFOA and Maryland GFOA.

We understand that GASB standards evolve over time. Should new GASB standards be issued during the contract term, we will:

- Review the standard and assess its applicability to the 53 municipal plans
- Develop a work plan and timeline for implementation
- Update our valuation and reporting systems accordingly
- Provide draft templates and sample reports for MPOB review
- Deliver final reports in formats suitable for audit and public disclosure

## SECTION 4, SUBSECTION 4.3.1.1. QUALIFICATION AND EXPERIENCE 1

**Please describe the firm, the firm's qualifications for this engagement, the firm's experience in providing actuarial studies to municipal police officers plans and municipal firefighters plans, and the firm's experience working with small municipal government pension plans.**

Bolton is a full-service actuarial, employee benefits, compensation, and investment consulting firm with over 40 years of experience providing consulting services to clients in the public and corporate sectors, non-profit organizations, as well as to the Federal Government. We have a national client base and are the actuary for more than 85 public sector pension plans/systems and over 150 OPEB plans. Our client base represents a broad spectrum, from small cities to large counties and states.

Our six consulting divisions provide pension and retirement, health and benefits, compensation, investment, HR consulting services, and communications and employee engagement for the public sector, corporate, multi-employer plans, and non-profit organizations:

HEALTH	RETIREMENT	INVESTMENT	REWARDS	TALENT	COMMUNICATIONS
<ul style="list-style-type: none"> <li>Strategy and plan design</li> <li>Plan benchmarking and performance</li> <li>Health actuarial services</li> <li>Wellbeing and population health</li> <li>Brokerage and exchange services</li> <li>Pharmacy benefit management</li> <li>Group and voluntary benefits</li> <li>Claim and dependent verification audits</li> <li>Vendor evaluation and selection</li> <li>Compliance support</li> <li>Retiree medical Benefits administration and enrollment services</li> </ul>	<ul style="list-style-type: none"> <li>Retirement strategy and plan design</li> <li>Actuarial services</li> <li>Administration and compliance</li> <li>Actuarial audits</li> <li>Asset/liability studies</li> <li>Risk management consulting</li> <li>Plan terminations</li> <li>Defined contribution consulting</li> <li>Plan compliance</li> </ul>	<ul style="list-style-type: none"> <li>Investment policy review and deployment</li> <li>Manager evaluations and searches</li> <li>Performance measurement, modeling, and monitoring</li> <li>Defined contribution consulting</li> <li>Vendor searches</li> <li>Compliance support</li> <li>Plan governance and fiduciary services</li> <li>Asset allocation studies</li> </ul>	<ul style="list-style-type: none"> <li>Reward strategy</li> <li>Board and executive compensation</li> <li>Broad-based employee pay</li> <li>Sales compensation</li> <li>Global remuneration</li> <li>Surveys and research</li> </ul>	<ul style="list-style-type: none"> <li>Executive coaching</li> <li>Team assessment and development</li> <li>Strategic workforce planning</li> <li>Human capital consulting</li> <li>Leader and team onboarding</li> <li>Organizational design</li> </ul>	<ul style="list-style-type: none"> <li>Print and digital brochures, flyers, posters, postcards, enrollment guides</li> <li>Leader talking points, FAQs</li> <li>Employee-facing training, presentations and webinars</li> <li>Videos, social media</li> <li>HR/manager training</li> <li>Change narrative and key message playbook</li> <li>Stakeholder education and engagement</li> <li>HR/leader education and training</li> <li>Employee communications</li> <li>Employee events</li> <li>Promotional, multimedia campaigns</li> </ul>

Bolton has been working with the MPOB since 2019, providing consistent, high-quality actuarial services tailored to the unique needs of the municipal police and fire pension plans. We bring extensive experience in conducting actuarial studies for both municipal police officers' and firefighters' retirement systems, with a deep understanding of the regulatory, funding, and benefit structures specific to these plans. Our team includes credentialed actuaries with decades of combined experience working with small municipal government pension plans, allowing us to deliver insights that are both technically sound and practically applicable. This background ensures we are well-qualified to support the engagement with a high level of professionalism, accuracy, and responsiveness.

We have a professional staff of over 100 employees and currently employ 22 credentialed actuaries. These actuaries hold the following credentials, many with multiple credentials:

- 9 Fellows of the Society of Actuaries
- 9 Associates of the Society of Actuaries
- 17 Enrolled Actuaries
- 14 Fellows of the Conference of Consulting Actuaries
- 13 Members of the American Academy of Actuaries

Below is a sample of our annual public pension clients:

Client	No. of Members	Years as Client	Type of Plan
Takoma Park, MD	90	24	Sheriffs
Dover, DE	350	2	General Employees, Police
Cecil County, MD	550	15	Corrections Officers, Detention Officers, Sheriffs, Emergency Services
Rockville, MD	1,000	7	General Employees, Police
Washington County, MD	1,600	10	General Employees, Fire, Police
Frederick County, MD	2,800	14	General Employees, Dispatchers, Fire, Police
<b>WV MPOB</b>	<b>3,500</b>	<b>7</b>	<b>Fire, Police</b>
Howard County, MD	5,300	19	General Employees, Corrections Officers, Deputy Sheriffs, Dispatchers, Fire, Police
City of Providence, RI	7,100	3	General Employees, Fire, Police
Anne Arundel County, MD	7,700	20	General Employees, Detention Officers, Deputy Sheriffs, Fire, Police
District of Columbia Retirement Board	25,000	6	Teachers, Fire, Police
US State Department	57,000	10	Employees
New York State Teachers Retirement System	450,000	2	Teachers
MD Department of Legislative Services (DLS) (MD State Retirement and Pension System)	430,000	8	General Employees Teachers Corrections Officers State Police Law Enforcement Legislators Judges

## SECTION 4, SUBSECTION 4.3.1.2. QUALIFICATION AND EXPERIENCE 2

Please provide at least three references, at least one of which must have a small municipal government defined benefit pension plan. Please provide the contact information for the pension plan name, contact person, their address, telephone number, and email.

All listed have a defined benefit pension plan.

ORGANIZATION	CONTACT NAME AND TITLE	ADDRESS, PHONE NUMBER AND EMAIL
City of Rockville, Maryland	Stacy Webster, Finance Director	111 Maryland Ave. Rockville, MD 20850 (240) 314-8407 swebster@rockvillemd.gov
Howard County, Maryland	Rafiu Ighile, Director of Finance	3430 Courthouse Drive Ellicott City, MD 21043 (410) 313-3217 righile@howardcountymd.gov
Frederick County, Maryland	Erin White, Finance Director	12 E. Church St. Frederick, MD 21701 (301) 600-1193 EWhite@FrederickCountyMD.gov
International Association of Firefighters	Frank Ramagnano, Assistant to the General-Secretary Treasurer	1750 New York Avenue, NW Suite 300 Washington, D.C. 20006 (647) 224-3888 framagnano@iaff.org
Maryland Department of Legislative Services	Michael Rubenstein, Policy Analyst	90 State Circle Annapolis, MD 21401 (410) 946-5520 Michael.Rubenstein@mga.maryland.gov

## SECTION 4, SUBSECTION 4.3.1.3. QUALIFICATION AND EXPERIENCE 3

Please provide a proposed staffing plan for this project, including the biographies of all staff identified for this project and a printout of the actuary's current actuarial directory listing from the Society of Actuaries or the American Academy of Actuaries as applicable.

For this engagement, we will continue to support the MPOB using the same experienced team that you have gotten to know over the past seven years. **Jim Ritchie** will serve as your lead consultant, bringing strategic oversight and decades of actuarial experience to the project. He will be supported by **Jordan McClane**, a seasoned actuary with a strong background in municipal plan valuations, and **Janice Twardowicz**, who brings additional technical depth and project continuity. **Tom Vicente** will act as the peer reviewer, providing an independent layer of quality assurance to ensure all deliverables meet our rigorous standards. **Alan Torroella** will serve as the senior analyst and back up to Jordan, supported by **Darren Rodoff**, both of whom will handle the detailed data analysis and modeling work. This collaborative structure—anchored by multiple senior actuaries and supported by a robust analytical team—reflects our commitment to excellence and ensures that every aspect of the engagement is handled with precision, reliability, and care.

Biographies of all staff for this project begin on the next page. Printouts of each actuary's current actuarial directory listing are found in the Appendix.

**JIM RITCHIE, ASA,  
FCA, EA, MAAA**  
PRESIDENT OF  
BOLTON  
RETIREMENT

**EDUCATION**

B.B.A., University of Texas,  
Actuarial Science

**Jim Ritchie** is President of Bolton Retirement. Jim has over 35 years of actuarial experience working with plan sponsors in the public and private sectors. Jim joined Bolton in June 2018, following his previous service as a Partner with two large actuarial consulting firms. Jim leads approximately 16 clients for administrative and actuarial services, including several multi-employer pension funds. His many years of experience working with a wide variety of plan sponsors allow Jim to be a general resource for our staff and a mentor to some of our younger consultants.

Jim has worked on several large, complex accounts in a consulting capacity (either valuation or audit) including being the signing actuary for the Bert Bell/Pete Rozell NFL Player Retirement Plan, some of the largest public pension plans in the country, and the Department of Energy, which involved the oversight of over 70 contractor pension and retiree medical plans totaling more than \$45 billion in liabilities. Jim also works with the Maryland 529 plan.

**CREDENTIALS AND MEMBERSHIPS**

- Member of the Archdiocese of Baltimore's Board of Financial Administration (term ends June 30, 2028)
- Chair of the Archdiocese of Baltimore's lay employee's retirement committee
- Associate in the Society of Actuaries
- Fellow of the Conference of Consulting Actuaries
- Enrolled Actuary
- Member of the American Academy of Actuaries

# JORDAN MCCLANE, FSA, EA, FCA, MAAA CONSULTING ACTUARY

## EDUCATION

B.S., Smeal College of Business  
at Pennsylvania State  
University, Actuarial Science

**Jordan McClane** is a consulting actuary with over 14 years of experience, specializing in public sector defined benefit (DB) pension plans. Since joining Bolton in 2017, he has served a diverse range of public entities—from small counties to large cities and state systems—providing actuarial valuations, audits, and strategic consulting. His expertise spans plans covering uniformed and non-uniformed employees, teachers, legislators, judges, and volunteer firefighters through Length of Service Award Programs (LOSAPs).

He is a lead valuation actuary for several of Bolton’s public sector clients and has conducted actuarial audits for some of the largest pension systems in the country.

Jordan actively contributes to the actuarial profession. He was one of eleven members of the Conference of Consulting Actuaries’ (CCA) Public Plans Committee who authored the second edition of the influential white paper, *Actuarial Funding Policies and Practices for Public Pension Plans* (August 2024). He is also a frequent speaker at industry conferences, including the CCA Annual Meeting, the CCA Enrolled Actuaries Conference, and the NCPERS Annual Conference. His recent presentations have addressed topics such as Deferred Retirement Option Programs (DROPs), workforce trends, inflation and COLAs, and funding policy best practices.

## CREDENTIALS AND MEMBERSHIPS

- Fellow of the Society of Actuaries (2019)
- Enrolled Actuary (2017)
- Fellow of the Conference of Consulting Actuaries (2020)
- Member of the American Academy of Actuaries (2019) - Public Plan Committee Member

**THOMAS VICENTE,  
FSA, FCA, EA, MAAA  
SENIOR CONSULTING  
ACTUARY**

**EDUCATION**

B.S., Drexel University,  
Mathematics

**Tom Vicente** is a senior consulting actuary with Bolton and the leader of Bolton's Public Sector Pension Practice. Tom has over 30 years of experience in actuarial, retiree medical, and pension consulting services, as well as the administration and communication of retirement programs.

Tom's focus is on providing high value to clients through innovative solutions, strong communication, and high-quality, timely results. He has been a speaker for different groups, including NCPERS, Maryland GFOA, the American Academy of Actuaries, the Society of Actuaries, as well as local groups, such as the Georgia GFOA where he spoke about the types and benefits of actuarial audits for pension and OPEB plans. He also spoke at an SOA-sponsored webcast on the impact of COVID-19 on public sector pension and OPEB plans. Tom has published a whitepaper on service purchase rules for governmental pension plans as well as a paper on the impact of accounting rules affecting governmental employers offering post-employment benefit programs and ways in which those employers could mitigate those costs.

**CREDENTIALS AND MEMBERSHIPS**

- Fellow Society of Actuaries (2000) - Social Insurance and Public Finance Sections Chairperson.
- Enrolled Actuary (1992 – active).
- Member, American Academy of Actuaries (1991) - Public Plan Committee Member.
- Fellow, Conference of Consulting Actuaries (2020) - Public Plans Community Member.

## **ALAN TORROELLA, ASA, EA**

ACTUARY

### **EDUCATION**

B.S., Johns Hopkins University, Applied Mathematics

**Alan Torroella** Has nine years of experience, all with Bolton. He is the lead programmer and senior analyst for several significant clients at Bolton and leads in developing new ways to use our valuation software (ProVal) to improve efficiency and accuracy of pension valuations. He leads projects and helps direct the staff to ensure projects are completed on time and accurately. Alan strives for efficiency and quality in the valuation process for each of his clients.

### **CREDENTIALS AND MEMBERSHIPS**

Alan is an Associate of the Society of Actuaries and, as of August 2025, an Enrolled Actuary. The EA credential has not yet been updated on the Actuarial Directory.

## **JANICE TWARDOWICZ**

ACTUARIAL  
CONSULTANT

### **EDUCATION**

B.S., University of Maryland, Mathematics

**Janice Twardowicz** is an actuarial consultant with over 30 years of consulting experience on defined benefit pension plans and retiree medical plans for both public sector and private sector sponsors. She has extensive experience with preparing pension valuations and studies on a wide variety of issues.

Janice services about 13 clients with an average tenure with the firm of over 10 years.

## **DARREN RODOFF**

ACTUARIAL  
ANALYST

### **EDUCATION**

B.S., Lebanon Valley College, Actuarial Science

**Darren Rodoff** is an actuarial analyst with Bolton. He joined the firm in 2023. Darren primarily works within the public sector, completing significant projects such as annual valuation reports, GASB reports, and benefit calculations.

Darren graduated from Lebanon Valley College in May 2023 with a B.S. in Actuarial Science and previously worked as an actuarial intern at Bolton in 2022.

### **CREDENTIALS AND MEMBERSHIPS**

Darren has passed P and FM exams and continues to sit for others on the path to obtaining the Associate of the Society of Actuaries credential.

# ATTACHMENT B:

## MANDATORY SPECIFICATIONS CHECKLIST

### SECTION 4, SUBSECTION 4.2.2.1. MANDATORY REQUIREMENT 1

**Vendor shall provide only "qualified actuaries" for this project. A "Qualified Actuary" means only an actuary who is a member of the Society of Actuaries or the American Academy of Actuaries and who has at least 3 years of experience with police and firefighter plans.**

We confirm that all actuaries that will work on this engagement will be qualified actuaries.

### SECTION 4, SUBSECTION 4.2.2.2. MANDATORY REQUIREMENT 2

**Vendor shall provide a succession plan in the event the firm's actuaries are unable to perform the work due to illness, an accident, cessation of employment, or for any other reason as determined by the vendor or by the MPOB.**

In the event that Jim Ritchie becomes unavailable, Jordan McClane will assume responsibility for the project. In the event that both Jim and Jordan are unavailable, Tom Vicente and Alan Torroella will assume responsibility. This contingency is part of our standard practice of assigning two senior actuaries to each engagement, ensuring continuity and maintaining the highest level of service regardless of unforeseen circumstances.

### SECTION 4, SUBSECTION 4.2.2.3. MANDATORY REQUIREMENT 3

**Vendor shall utilize a cloud-based file sharing service (e.g., ShareFile, SharePoint, Dropbox, or equivalent) to collect, store, and submit all required documentation and deliverables. The selected platform must support secure access controls and version management to ensure document integrity and confidentiality. All documents collected by the Vendor must be in Microsoft Office file formats (e.g., .docx, .xlsx), unless otherwise specified by the MPOB.**

**The MPOB will retain full ownership and control of all data and information collected or submitted via the file sharing service. Upon contract expiration or termination, the Vendor shall ensure continued MPOB access to all collected or submitted materials without restriction for a minimum of 120 days.**

**The MPOB must have the ability to use the same file sharing platform to facilitate the collection of information from municipal finance staff and pension board trustees for other projects (e.g. compliance reviews, pension recalculations, etc.), without requiring additional setup or vendor intervention.**

Bolton uses Citrix ShareFile for secure file sharing. All communications and data sharing between Citrix ShareFile and the user are encrypted using Transport Layer Security (TLS)

encryption protocols and up to AES 256-bit encryption. Files are also protected while at rest on Citrix ShareFile servers with AES 256-bit encryption.

Citrix ShareFile servers reside in SSAE 16 accredited datacenters with features including hurricane-rated roofs and multiple redundant power sources. All data is automatically updated to servers in separate locations. ShareFile performs regular backups of all data, including off-site data backups, to protect against almost all disaster scenarios.

Data sharing with Citrix ShareFile is straightforward and simple. The URL can be saved as a favorite or easily accessed from our website. Users can choose to be notified via email when files have been uploaded to or downloaded from the ShareFile site. Folders can be established within ShareFile to help organize shared data and can easily be reorganized at a later date as needs change. Files that are uploaded via Citrix ShareFile can be set to expire after a set timeframe or can be set to be retained indefinitely. With the option to retain uploaded files indefinitely, clients can retrieve files previously uploaded using a simple search mechanism.

Clients have found this to be a user-friendly and safe way to transmit sensitive data to us. The MPOB staff and municipal contacts have been using our ShareFile for the past several years – not just for providing information to Bolton, but also to facilitate the transfer of information for other projects (such as compliance reviews and pension recalculations).

The MPOB will retain full ownership and control of all data and information collected or submitted via the file sharing service. Upon contract expiration or termination, the MPOB will have continued access to all collected or submitted materials without restriction for a minimum of 120 days.

#### **SECTION 4, SUBSECTION 4.2.2.4. MANDATORY REQUIREMENT 4**

**The selected vendor shall cooperate fully with its successor in the event of contract expiration or termination, ensuring a smooth and seamless transition of all work, responsibilities, and deliverables. The vendor must provide all necessary support, documentation, and training to facilitate the transition process, minimize disruptions, and ensure continuity of service. This includes, but is not limited to, transferring knowledge, all data collected from municipal policemen's or firemen's pension funds, and relevant materials to the successor in a timely and efficient manner. Work performed by the consultant in fulfilling this requirement shall be billed on an hourly basis using the hourly rates quoted on the cost sheet and in effect during the final year of the contract.**

In general, this requirement is consistent with the Code of Professional Conduct for the U.S. actuarial profession. Bolton will abide by the Code of Professional Conduct during the transition of actuarial services:

- Cooperate fully with its successor in the event of contract expiration or termination, ensuring a smooth and seamless transition of all work, responsibilities, and deliverables.
- Provide all necessary support, documentation, and training to facilitate the transition process, minimize disruptions, and ensure continuity of service – including, but not limit to, transferring knowledge, all data collected from municipal policemen's or firemen's pension funds, and relevant materials to the successor in a timely and efficient manner.

## **SECTION 4, SUBSECTION 4.3.2.1. MANDATORY REQUIREMENT 1**

**The firm must have provided actuarial services to governmental defined benefit pension plans for the past five years or more.**

We confirm that we have been providing actuarial services to governmental defined benefit plans for over 40 years, and have been working with MPOB since 2019.

# APPENDIX

## CURRENT ACTUARIAL DIRECTORY LISTINGS REQUIRED FORMS

# The Actuarial Directory

## James E Ritchie

ASA MAAA EA FCA

President of Bolton Retirement

Bolton

1 W. Pennsylvania Ave.  
Suite 600  
Towson  
Maryland 21204  
United States

Email [jritchie72@gmail.com](mailto:jritchie72@gmail.com)

Email [jritchie@boltonusa.com](mailto:jritchie@boltonusa.com)

Tel +1(410)935-5598



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Designations

ASA 1994  
MAAA 1995  
EA 1996  
FCA 2018

SOA CPD attestation status

Compliant(2023-2024)  
Compliant(2022-2023)

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Academic degrees

B.B.A.

Industry

Consulting

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Primary area of practice

Retirement

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Society of Actuaries Sections

Retirement

# The Actuarial Directory

## Jordan Michael McClane

FSA EA MAAA FCA  
Consulting Actuary

Bolton

36 S Charles St Ste 1000  
Baltimore  
Maryland 21201-3020  
United States

Email [jmcclane@boltonusa.com](mailto:jmcclane@boltonusa.com)

Tel +1(484)947-9939



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### Designations

EA 2017  
FSA 2019  
MAAA 2019  
FCA 2020

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### SOA CPD attestation status

Compliant(2023-2024)  
Compliant(2022-2023)

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### Academic degrees

B.S.

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### Industry

Consulting

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Primary area of practice

Retirement

Specializations

Private Sector - Pension

Public Sector - Pension

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Society of Actuaries Sections

Retirement

Social Insurance & Public Finance

# The Actuarial Directory

## Thomas G Vicente

FSA MAAA EA FCA

Senior Consulting Actuary

Bolton Partners

36 S Charles St Ste 1000

Baltimore

Maryland 21201-3020

United States

Email [tvicente@boltonusa.com](mailto:tvicente@boltonusa.com)

Tel +1(443)573-3918



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### Designations

MAAA 1991  
EA 1992  
FSA 2000  
FCA 2020

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### SOA CPD attestation status

Compliant(2022-2023)  
Compliant(2023-2024)

---

### Academic degrees

B.S.

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### Primary area of practice

Retirement

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Specializations

Other Post-Employment Benefits

Private Sector - Pension

Public Sector - Pension

Society of Actuaries Sections

Health

Retirement

Social Insurance & Public Finance

## Alan Torroella

ASA

Email [alant512@gmail.com](mailto:alant512@gmail.com)

Tel +1(352)870-4315



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Designations

ASA 2022

SOA CPD attestation status

Compliant(2022-2023)

Compliant(2023-2024)

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Society of Actuaries Sections

Retirement

# REQUEST FOR PROPOSAL

## Municipal Pensions Oversight Board and RFP MPO2600000001

### CERTIFICATION AND SIGNATURE

By signing below and submitting this page as an attachment to the vendor's bid, I certify that I have reviewed this Request for Proposal in its entirety; that I understand the requirements, terms and conditions, and other information contained herein; that this bid, offer or proposal constitutes an offer to the Municipal Pensions Oversight Board that cannot be unilaterally withdrawn; that the product or service proposed meets the mandatory requirements contained in the Solicitation for that product or service, unless otherwise stated herein; that the Vendor accepts the terms and conditions contained in the Solicitation, unless otherwise stated herein; that I am submitting this bid, offer or proposal for review and consideration; that I am authorized by the vendor to execute and submit this bid, offer, or proposal, or any documents related thereto on vendor's behalf; that I am authorized to bind the vendor in a contractual relationship; and that to the best of my knowledge, the vendor has properly registered with any State agency that may require registration.

Bolton Partners, Inc.; DBA Bolton  
(Company)

Jim Ritchie President, Bolton Retirement  
(Name) (Title)

 September 5, 2025  
Authorized Signature (Date)

# REQUEST FOR PROPOSAL

## Municipal Pensions Oversight Board and RFP MPO2600000001

### ADDENDUM ACKNOWLEDGEMENT FORM SOLICITATION NO.:

Instructions: Please acknowledge receipt of all addenda issued with this solicitation by completing this addendum acknowledgment form. Check the box next to each addendum received and sign below. Failure to acknowledge the addenda may result in bid disqualification.

Acknowledgment: I hereby acknowledge receipt of the following addenda and have made the necessary revisions to my proposal, plans and/or specification, etc.

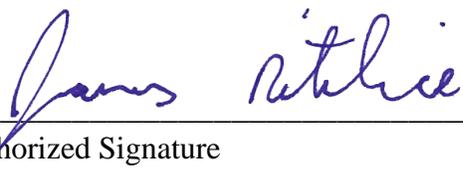
Addendum Numbers Received:

(Check the box next to each addendum received)

- Addendum No. 1     Addendum No. 6
- Addendum No. 2     Addendum No. 7
- Addendum No. 3     Addendum No. 8
- Addendum No. 4     Addendum No. 9
- Addendum No. 5     Addendum No. 10

I understand that failure to confirm the receipt of the addenda may be cause for the rejection of this bid. I further understand that any verbal representation made or assumed to be made during any oral discussion held between Vendor's representatives and any state personnel is not binding. Only the information issued in writing and added to the specifications by an official addendum is binding.

Bolton Partners, Inc.; DBA Bolton  
Company

  
Authorized Signature

September 5, 2025  
Date

NOTE: This addendum acknowledgement must be submitted with the bid by submitting the page to the MPOB via email to expedite document processing.



**State of West Virginia  
Agency Request for Proposals  
Service - Prof**

<b>Proc Folder:</b> 1733403			<b>Reason for Modification:</b>	
<b>Doc Description:</b> Actuarial Services				
<b>Proc Type:</b> Agency Master Agreement				
<b>Date Issued</b>	<b>Solicitation Closes</b>	<b>Solicitation No</b>	<b>Version</b>	<b>Phase</b>
2025-07-14	2025-09-10 11:00	ARFP 0946 MPO2600000001	1	Final

**BID RECEIVING LOCATION**

EXECUTIVE DIRECTOR PHONE 304-356-2422  
MUNICIPAL PENSIONS OVERSIGHT BOARD  
301 EAGLE MOUNTAIN ROAD, SUITE 251  
  
CHARLESTON WV 25311  
US

**VENDOR**

**Vendor Customer Code:**

**Vendor Name :** Bolton Partners, Inc.; DBA Bolton

**Address :** 1

**Street :** W. Pennsylvania Ave., Suite 600

**City :** Towson

**State :** Maryland **Country :** United States of America **Zip :** 21204

**Principal Contact :** Jim Ritchie

**Vendor Contact Phone:** 443.573.3924 **Extension:** N/A

**FOR INFORMATION CONTACT THE BUYER**

Janet C Warren  
(304) 356-2420  
janet.c.warren@wv.gov

**Vendor Signature X**  **FEIN#** 52-1231144 **DATE** September 5, 2025

**All offers subject to all terms and conditions contained in this solicitation**

**SCHEDULE OF EVENTS**

<b><u>Line</u></b>	<b><u>Event</u></b>	<b><u>Event Date</u></b>
1	RFP Release to the Public	2025-07-14
2	10:00 a.m. EST, Mandatory Pre-Bid Meeting	2025-07-28
3	10:00 a.m. EST Vendors Written Question Submission Deadline	2025-08-04
4	4:00 p.m. EST, Addendum Issued	2025-08-18
5	11:00 a.m. EST, Proposal Sumbission Date	2025-09-10
6	11:15 a.m. EST, Technical Proposal Opening	2025-09-10
7	TBD - Oral Presentation	2025-09-10
8	Contract Award Made	2025-12-12

	Document Phase	Document Description	Page
MPO2600000001	Final	Actuarial Services	3

**ADDITIONAL TERMS AND CONDITIONS**

See attached document(s) for additional Terms and Conditions



**State of West Virginia  
Agency Request for Proposals  
Service - Prof**

<b>Proc Folder:</b> 1733403		<b>Reason for Modification:</b>	
<b>Doc Description:</b> Actuarial Services		Addendum No., 1 - MPO2600000001 Answers for the ARFP due on or before August 18, 2025 submitted today August 12, 2025	
<b>Proc Type:</b> Agency Master Agreement			
<b>Date Issued</b>	<b>Solicitation Closes</b>	<b>Solicitation No</b>	<b>Version</b>
2025-08-12	2025-09-10 11:00	ARFP 0946 MPO2600000001	2
			<b>Phase</b>
			Final

**BID RECEIVING LOCATION**

EXECUTIVE DIRECTOR PHONE 304-356-2422  
MUNICIPAL PENSIONS OVERSIGHT BOARD  
301 EAGLE MOUNTAIN ROAD, SUITE 251  
  
CHARLESTON WV 25311  
US

**VENDOR**

**Vendor Customer Code:**

**Vendor Name :** Bolton Partners, Inc.; DBA Bolton

**Address :** 1

**Street :** W. Pennsylvania Ave., Suite 600

**City :** Towson

**State :** Maryland **Country :** United States of America **Zip :** 21204

**Principal Contact :** Jim Ritchie

**Vendor Contact Phone:** 443.573.3924 **Extension:** N/A

**FOR INFORMATION CONTACT THE BUYER**

Janet C Warren  
(304) 356-2420  
janet.c.warren@wv.gov

**Vendor  
Signature X**

**FEIN#** 52-1231144

**DATE** September 5, 2025

**All offers subject to all terms and conditions contained in this solicitation**

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MPO2600000001	Final	Actuarial Services	3

**ADDITIONAL TERMS AND CONDITIONS**

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Bolton  
1 W. Pennsylvania Ave.  
Suite 600  
Towson, MD 21204

410.547.0500  
[www.boltonusa.com](http://www.boltonusa.com)  
[solutions@boltonusa.com](mailto:solutions@boltonusa.com)



**REQUEST FOR PROPOSAL No.  
MPO2600000001  
Actuarial Services  
COST PROPOSAL**

**PREPARED FOR**

Janet Warren  
Procurement Officer  
Municipal Pensions Oversight Board

**PREPARED BY**

September 8, 2025

James Ritchie, ASA, EA, FCA, MAAA  
President, Bolton Retirement  
Bolton  
410-935-5598  
jritchie@boltonusa.com

**MUNICIPAL PENSIONS OVERSIGHT BOARD  
REQUEST FOR PROPOSAL  
REQUISITION NO: MPO260000001  
Attachment C  
Cost Sheet**

	Life of Contract					
	Year 1	Year 2	Year 3	Year 4	Year 5	Total
<b>A Cost of Annual Valuation of 53 Plans and Consolidated Report (Fixed Cost)</b>	\$ 220,000.00	\$ 227,000.00	\$ 234,000.00	\$ 241,000.00	\$ 248,000.00	\$ 1,170,000.00
<b>B GASB 67/68 Reports (Fixed Cost)</b>	\$ 35,000.00	\$ 36,000.00	\$ 37,000.00	\$ 38,000.00	\$ 39,000.00	\$ 185,000.00
<b>*GASB per Unit Cost</b>	\$ 660.38	\$ 679.25	\$ 698.11	\$ 716.98	\$ 735.85	
<b>C Experience Study (Fixed Cost)</b>	\$ 35,000.00			\$ 38,000.00		\$ 73,000.00
<b>D Cost Escalator Rate</b>		103.00%	103.00%	103.00%	103.00%	
<b>E Total Hourly Cost</b>	\$95,200.00	\$98,056.00	\$100,997.68	\$104,027.61	\$107,148.44	\$505,429.73
						<b>Total Cost of Proposal</b>
						<b>\$1,933,429.73</b>

F Special Project/In person meetings:			
	Total Hours*	Hourly Rate	Total Hourly Cost
<b>Senior Actuary</b>	100	\$ 284.00	\$28,400.00
<b>Actuary</b>	100	\$ 284.00	\$28,400.00
<b>Actuary Assistant</b>	100	\$ 284.00	\$28,400.00
<b>Clerical</b>	100	\$ 100.00	\$10,000.00
<b>Total Hourly Cost</b>			\$95,200.00

**Instructions: The gray shaded cells have been locked by the MPOB as they contain formulas. The blue shaded cells are unlocked and available for the vendor to provide cost information.**

**A - List the cost of the Annual Valuation of all plans/Consolidated Report**  
**B - Total annual cost of individual GASB reports.**  
**C - Experience Study to be completed every third year.**  
**D - List the rate of increase of any price adjustments**  
**E - First year is equal to total cost for item F. Previous year multiplied by item D (cost escalator rate) for remaining years 2-5.**  
**F - Enter individual hourly rates to establish total hourly cost and base year.**

\* - Estimated hours for proposal purposes only.

Note 1:

Rates shall be inclusive of all expenses and costs associated with providing the services, including travel expenses. No travel will be reimbursed by the MPOB and will be the sole responsibility of the vendor.

## Bolton Fee Estimate Pricing Schedule

Valuation Report Construction Components	Effort Percentage	Calculated Cost of Year 1	Calculated Cost of Year 2	Calculated Cost of Year 3	Calculated Cost of Year 4	Calculated Cost of Year 5
Prepare and send data request	5.0%	\$ 11,000.00	\$ 11,350.00	\$ 11,700.00	\$ 12,050.00	\$ 12,400.00
Ask data questions	5.0%	\$ 11,000.00	\$ 11,350.00	\$ 11,700.00	\$ 12,050.00	\$ 12,400.00
Compile and reconcile data	15.0%	\$ 33,000.00	\$ 34,050.00	\$ 35,100.00	\$ 36,150.00	\$ 37,200.00
Update valuation worksheets and generate preliminary results	15.0%	\$ 33,000.00	\$ 34,050.00	\$ 35,100.00	\$ 36,150.00	\$ 37,200.00
Gain/loss analysis	10.0%	\$ 22,000.00	\$ 22,700.00	\$ 23,400.00	\$ 24,100.00	\$ 24,800.00
Generate final results for reports	10.0%	\$ 22,000.00	\$ 22,700.00	\$ 23,400.00	\$ 24,100.00	\$ 24,800.00
Get MPOB approval of report templates	5.0%	\$ 11,000.00	\$ 11,350.00	\$ 11,700.00	\$ 12,050.00	\$ 12,400.00
Prepare and send valuation reports	20.0%	\$ 44,000.00	\$ 45,400.00	\$ 46,800.00	\$ 48,200.00	\$ 49,600.00
Prepare consolidated valuation report/presentation	10.0%	\$ 22,000.00	\$ 22,700.00	\$ 23,400.00	\$ 24,100.00	\$ 24,800.00
COLA letters	5.0%	\$ 11,000.00	\$ 11,350.00	\$ 11,700.00	\$ 12,050.00	\$ 12,400.00
		\$ -	\$ -	\$ -	\$ -	\$ -
		\$ -	\$ -	\$ -	\$ -	\$ -
		\$ -	\$ -	\$ -	\$ -	\$ -
		\$ -	\$ -	\$ -	\$ -	\$ -
		\$ -	\$ -	\$ -	\$ -	\$ -
<b>TOTAL</b>	<b>100.0%</b>	<b>\$ 220,000.00</b>	<b>\$ 227,000.00</b>	<b>\$ 234,000.00</b>	<b>\$ 241,000.00</b>	<b>\$ 248,000.00</b>