PTA

William B. Fornia, FSA | President

March 31, 2021

Ms. Bethany Rhodes
Executive Director
Ohio Retirement Study Council

Subject: Review of Ohio Police and Fire Funding Period and Actuarial Status as of January 2020

Dear Bethany:

As required by Section 742.311 of the Ohio Revised Code (ORC), we have reviewed the adequacy of the current statutory contribution rates to the Ohio Police and Fire Pension Fund (OP&F).

Our primary findings are:

- I. The current statutory contribution rates are adequate to fund the statutory benefits over a period of 28 years.
- II. Based on 2020 investment returns of approximately 9.21%, the unfunded liability is projected to decrease to about $6.64 billion, with a funding period of 26 years (from 1/1/2021).
- III. With an anticipated reduction in expected rate of investment return, the funding period will likely exceed 30 years.

This report demonstrates these findings and other issues related to OP&F's progress in meeting the funding objectives.

Topics to be addressed in this report include:

- Adequacy of current statutory contributions rates to fund current statutory benefits
- Requirements of ORC
- Projection methodology
- Impact of Medicare Part B benefits
- Allocation of costs between Police and Fire
- Potential future changes to actuarial assumptions
- Likelihood of necessity for future changes in benefits or contributions
- Health care benefits
- Reconciliation with earlier reports
- Potential ORSC recommendations

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BACKGROUND

Cavanaugh MacDonald Consulting, LLC (CMC), actuary for OP&F, issued the report on Actuarial Valuation of Pension Benefits as of January 1, 2020 in October 2020. The actuarial report is an essential measure of the funded position of OP&F. While the Actuarial Valuation focuses on pension benefits only, the report also includes the valuation of Medicare Part B premium reimbursements as requested by the Ohio Retirement Study Council (ORSC) so that further analysis of the impact of Part B reimbursements can be conducted.

An actuarial valuation is built upon five pillars:

- All individual demographic data of OP&F members (active, terminated, and retired)
- OP&F benefit provisions
- Actuarial assumptions as to future contingent events
- Pension fund asset information
- Funding policy and actuarial funding methods

The actuary uses these parameters to determine various actuarial measures, including:

- Actuarial Accrued Liabilities (AAL) for benefits as of the valuation date (January 1, 2020)
- Unfunded Actuarial Accrued Liabilities (UAAL)
- Normal Cost Rate: The contribution requirement to systematically fund the future service liabilities
- Funding Period necessary to completely amortize the UAAL

ADEQUACY

Section 742.311 of the ORC requires an annual review of the adequacy of the contribution rates provided under sections 742.31, 742.33, and 742.34 and the contribution rates recommended in a report by the actuary of OP&F for the forthcoming year. Section 742.31 governs the contributions made by the employees, 742.33 governs the contributions made by police officers' employers and 742.34 governs the contributions made by the firefighter employers.

CMC made a calculation that the unfunded liability for the statutory pension benefits would be fully amortized over a period of 28 years, based on the current level of contributions. The UAAL of $6.684 billion as of January 1, 2020 would decline to zero by December 31, 2047. We were able to replicate the CMC calculations of the projection of the unfunded actuarial accrued liability funding period and agree that they are reasonable.

These calculations were based on a smoothed Actuarial Value of Assets (AVA) of $15.360 billion. The true Market Value of Assets (MVA) is $15.637 billion. It is a common actuarial technique to use a smoothed Actuarial Value of Assets. This is done to prevent overcompensating for heavy swings in asset values. This smoothing technique is a major reason that the funding period did not fall further as a result of strong 2019 investment return. We calculate that if the calculation had been based on the MVA, the funding period would have been 26 years. Recall that this calculation as of the beginning of 2019 produced a funding period of 37 years. This demonstrates the substantial volatility of this measure.

The UAAL is $6.408 billion, based on the unsmoothed MVA. The AVA is $276 million less than the current (unsmoothed) MVA. Because the smoothing impact of this $276 million will be completely recognized within five years – long before the thirty-year funding period, an argument could be made that the funding period calculation should be based on the MVA instead of the AVA. This means that if experience after January 1, 2020 is exactly as expected, the unfunded liability will be completely amortized in 2045, a period of 26 years.

When including the liabilities for statutory Medicare Part B reimbursement, the AAL grows by $263 million. The CMC methodology assumes that $263 million of the $878 million in assets in the separate Health Care Stabilization Fund (HCSF) are considered to be allocated toward this Medicare Part B AAL. Consequently, there is no impact on Unfunded AAL by including Medicare Part B. We find that this approach is reasonable, although the solvency of the HCSF is weakened. This allocation of $263 million of the $878 million total represents 30% of the HCSF.

When this approach was utilized as of January 1, 2015, 48% of the HCSF was needed to be allocated to the Medicare Part B liability. This grew to 61% as of January 1, 2017. This was because the Medicare Part B AAL was increasing while the total HCSF was decreasing. But the actuarial liability for Medicare Part B benefits decreased from $551 million as of January 1, 2017 to $263 million as of January 1, 2020. This decrease was substantial and primarily due to an OP&F Board Policy to not increase the Medicare Part B reimbursement rate (from $107 per month) for the next three years. In addition, the actuarial assumption is now that there will be no further increase in this reimbursement rate. This improves funding available for pensions significantly, but, of course, is a consequence of the reduced Medicare Part B reimbursement. Furthermore, OP&F moved to an exchange-based retiree health program, which reduces the outflows from the HCSF.

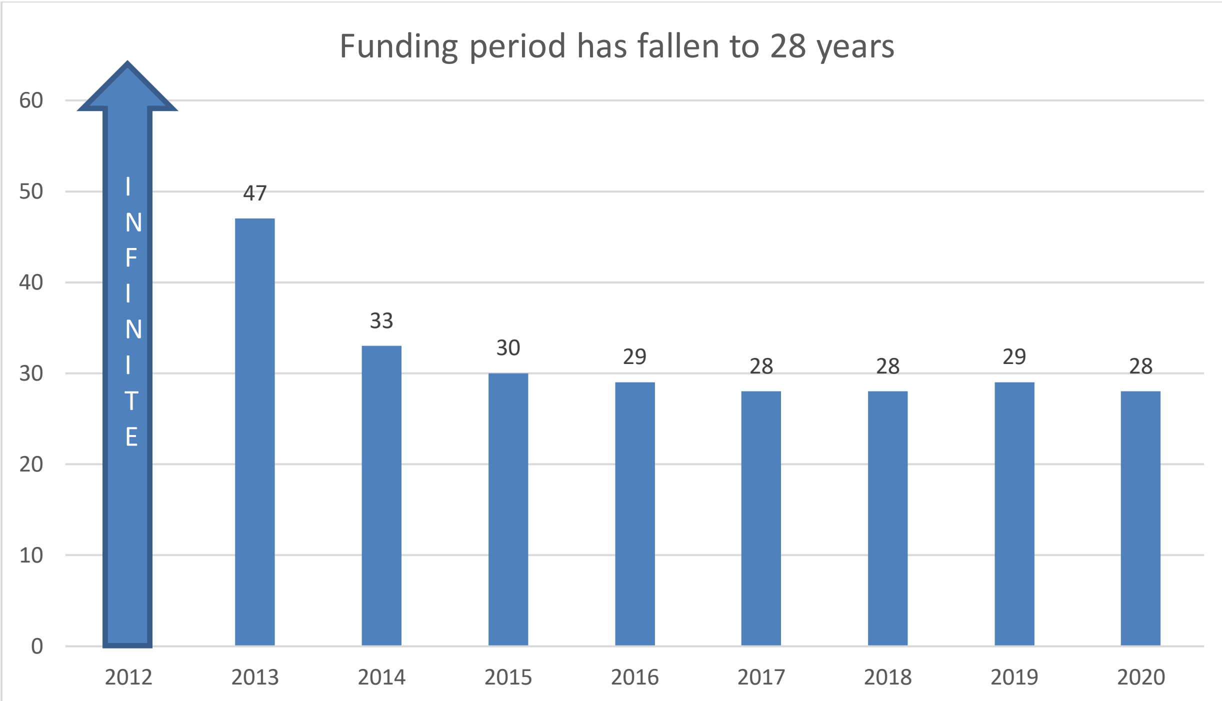
Our calculations are summarized in the table below and Appendix I. All dollar figures are in $billions as of January 1, 2020.

Funding Period on Various Bases (values in $billions)

Statutory Benefits Considered	Asset Basis	Actuarial Liability	Assets	UAAL	Funding Period
Pension Only	AVA	$22.044	$15.360	$6.684	28 years
Pension Only	MVA	22.044	15.637	6.408	26 years
Pension and Medicare B Reimbursement	AVA	22.308	15.360	6.948*	27 years
Pension and Medicare B Reimbursement	MVA	22.308	15.637	6.671*	25 years

* Unfunded Liability for scenarios with Medicare B reimbursement assumes that the reimbursement will be paid from the Health Care Stabilization Fund.

Note that the amortization period has fallen from 47 years for 2014 to 28 years for 2020. Prior to 2013 and Senate Bill 340, the OP&F amortization period was infinite, meaning that the contributions were projected to never pay off the unfunded liability. This shows strong improvement since 2012-2013, but some deterioration since 2014, since the funding period is expected to reduce by one each year as the date of anticipated full funding approaches. These are illustrated in the following graph.



REQUIREMENTS OF ORC 742.311

The Ohio Revised Code 742.311, for which this report is written, requires that the ORSC shall annually review the *adequacy* of the OP&F contribution rates. An additional requirement is that the calculations be based on the "entry age normal actuarial cost method" (EAN). We confirm that CMC is using EAN as the basis for its calculations.

ORC 742.311 also states that the ORSC "shall make recommendations to the general assembly that it finds necessary for the proper financing of the benefits of [OP&F]."

CMC reports that:

Section 742.16 of the ORC, as adopted by Senate Bill No. 82, sets forth an objective that the funding period is no more than 30 years. If the funding period exceeds 30 years, a plan shall be developed and presented by the Board of Trustees to the ORSC to reduce the funding period to not more than 30 years. Section 742.14 of the ORC, as amended by Senate Bill No. 340, sets forth that the 30-year funding analysis be performed every three years and the 30-year plan, if necessary, be developed and presented not later than 90 days after the Board of Trustees' receipt of the actuarial valuation and 30-year funding analysis. The most recent triennial analysis was based on the January 1, 2019 actuarial valuation, and showed the funding period was 29 years, so no 30-year funding plan is required. The next analysis will be performed based on the January 1, 2022 actuarial valuation.

The funding periods for the statutory benefits is now 28 years. This is expected to shorten as strong investment returns during 2019 and 2020 become more fully incorporated into the actuarial value of assets. As will be discussed below, we estimate that the OP&F may need to develop a modification to meet its 30-year plan in 2022 following the January 1, 2022 actuarial valuation as the actuarial assumed rate of investment return is reduced.

PROJECTION METHODOLOGY

While CMC is using the EAN method, they are reflecting certain future anticipated changes in its projections which determine the funding period. We believe that this approach is reasonable, although the methods do not follow the traditional use of the EAN method and its corresponding amortization period.

CMC calculates an employer amortization contribution rate toward the unfunded liability of 17.17% in its Table 1 Summary of Actuarial Valuation Results. CMC then goes on to demonstrate that the 17.17% amortization rate with anticipated future adjustments is sufficient to amortize the unfunded liability over 28 years. This is demonstrated in CMC's Table 7 and verified by PTA/KMS in Appendix 1 of this report. Note that the 17.17% rate is projected to increase to 17.70% by 2046. This increase is expected to occur because the normal cost for future members is projected to decrease as new members have a normal cost which is lower than the normal cost for current members. This cost savings is 0.53% of pay.

Note that traditional actuarial methods and their amortization calculations would not reflect this future expectation. Under the traditional calculation method, an actuarial contribution requirement is determined based only on the current normal cost rate plus an amortization of unfunded liability over 30 years based on AVA. If this were used, a rate higher than 17.17% would be required. That demonstrates that if the member contribution rate and future reduced benefit levels were not in effect, the 30-year period would not be met. We believe that it is reasonable and appropriate to include this anticipation of the changes to the normal cost of future members in the funding period calculation as does CMC.

In our table above, we calculated the funding period using both AVA and MVA. At this point in the investment cycle, the MVA exceeds the AVA. This is because the 2019 investment gains (offset by the 2018 investment losses) have not been fully recognized in AVA. CMC's projection calculations used the (lower) AVA. At this time, we believe it also important to consider the true MVA. This would mean that the funding period for statutory benefits is 26 years. The use of the higher MVA shortens the period by 2 years.

In a potential future year when hard decisions may be likely necessary in order to stay within the 30-year period, there could be a larger disparity between MVA and AVA. The purpose of AVA is to smooth out investment return fluctuations and not make panic decisions based on short term results. But 742.14 only requires a triennial report for a funding plan. This also has an effect of smoothing out fluctuations. We recommend that all decisions pertaining to plan changes be based on considering both MVA and AVA. ORSC requires reporting on an AVA basis only.

MEDICARE PART B IMPACT

As stated previously, the CMC 30-year funding period calculation did not explicitly reflect the non-pension statutory benefit of the reimbursement of Medicare Part B premiums. The inclusion of this benefit increases both the liabilities and assets and has no impact on the UAAL and therefore no impact on the funding period at this time.

There may be some ambiguity in this requirement, because 742.16 of the ORC, which discusses the thirty-year funding plan specifies "unfunded actuarial accrued pension liabilities." While CMC's funding period calculation did not explicitly address the Medicare Part B issue, because there are sufficient assets in the

Health Care Stabilization Fund ($879 million) to cover these liabilities ($263 million) at this time, the issue is moot. If experience deteriorates, there might not be sufficient assets in the future and the distinction might be relevant.

The $263 million is not explicitly segregated for Medicare Part B payments, and would decline in the future years if other health benefits (beyond Medicare Part B payments) are provided. In particular, 0.50% of pay is allocated to the HCSF, but 0.08% is the normal cost for the Medicare Part B benefits. This means that 0.42% can be explicitly attributed to health care benefits other than Medicare Part B. This substantial increase from 2017 is due to the reduction in anticipated future Medicare Part B premium reimbursement. The 0.08% contribution and the $263 million AAL attributed to Medicare Part B reimbursements are not dedicated or segregated, but comingled with other HCSF assets and liabilities.

During 2018 and 2019, the HCSF had the following cash flow, as shown in Table 4 of the CMC Health Care Actuarial Reports (all values in thousands):

Summary of HCSF Market Value of Plan Assets (values in $thousands)

Item	2018	2019
Market Value of HCSF as of January 1	$932,088	$793,786
Contributions		
Employer	11,338	11,973
Member Premiums	73,157	523
Total	84,495	12,497
Benefits and Administrative Expenses	218,605	77,189
Investment Income	(27,638)	129,948
Other Income	23,446	19,647
Market Value of HCSF as of December 31	793,786	878,689

In very approximate terms, CMC is projecting that the HCSF is decreasing each year by $90 million due to benefits and increasing by $12 million due to contributions plus other income. If investment return on the $878 million fund is 8% as assumed, that would generate roughly $70 million. So the HCSF was expected to drop by about $10 million per year. In particular, CMC projects insolvency in 2037 if returns are 8% and in 2033 if returns are 6%.

OP&F moved to an Exchange solution effective January 1, 2019, which provides eligible retirees and survivors with a fixed monthly stipend earmarked to pay for health care, and OP&F's reimbursement of Medicare Part B premiums. This has reduced net outflows substantially, as demonstrated in the table above where they dropped from $218,605 to $77,189.

Prior to the 2018 investment losses and the move to an Exchange solution, the HCSF was projected to be depleted by 2034. This is now 2037. Note that this is ten years prior to the full funding of pension benefits. This means that even if all actuarial assumptions are met, the HCSF would be depleted prior to the payoff of the unfunded pension liability.

ALLOCATION BETWEEN POLICE AND FIRE

Contributions to OP&F come from three sources:

- 12.25% Employee Contributions
- 19.50% Police Employer Contributions
- 24.00% Firefighter Employer Contributions

Because of the disparity between police and firefighter employer contributions, it could be argued that firefighter employers are paying a larger share of the unfunded liability than are police employers. While this is accurate, the police and fire components of OP&F are completely merged and the assets are not explicitly separated between Police and Fire. CMC does do an allocation of assets between P&F based on the AAL for purposes of its Table 1 and Table 1A. But during the year, contributions are pooled and not separated into different P&F asset accounts. Consequently, each year the assets would be allocated between the Police and Fire in accordance with AAL and the two components would be amortized in the same year.

If, however, the plans were separated and contributions allocated based on employer, the results would be quite different. We estimate that rather than both being fully funded in 28 years (based on AVA), the fire would be fully funded in 21 years while police would be fully funded only after 40 years. This also assumes that fire UAAL amortization contributions (currently 19.39% of pay) would not be required after 21 years, but would either cease, or be directed toward retiree healthcare benefits. Under the current CMC projection approach, both Police and Fire employers would continue toward the UAAL until fully funded.

CHANGES TO ACTUARIAL ASSUMPTIONS

Buck, the prior actuary, conducted an actuarial review of the demographic and economic experience for the five-year period from 2012 through 2016. As a result of this experience review, certain actuarial assumption changes were adopted by the Board and effective for the January 1, 2017 actuarial valuation.

Along with modifications to certain demographic assumptions, including turnover and mortality, OP&F adopted the following changes to the economic assumptions:

- Reduced investment return rate from 8.25% to 8.00%
- Reduced the payroll growth rate from 3.75% to 3.25%
- Reduced salary scale at all ages by 0.5% to reflect the decrease in inflation assumption

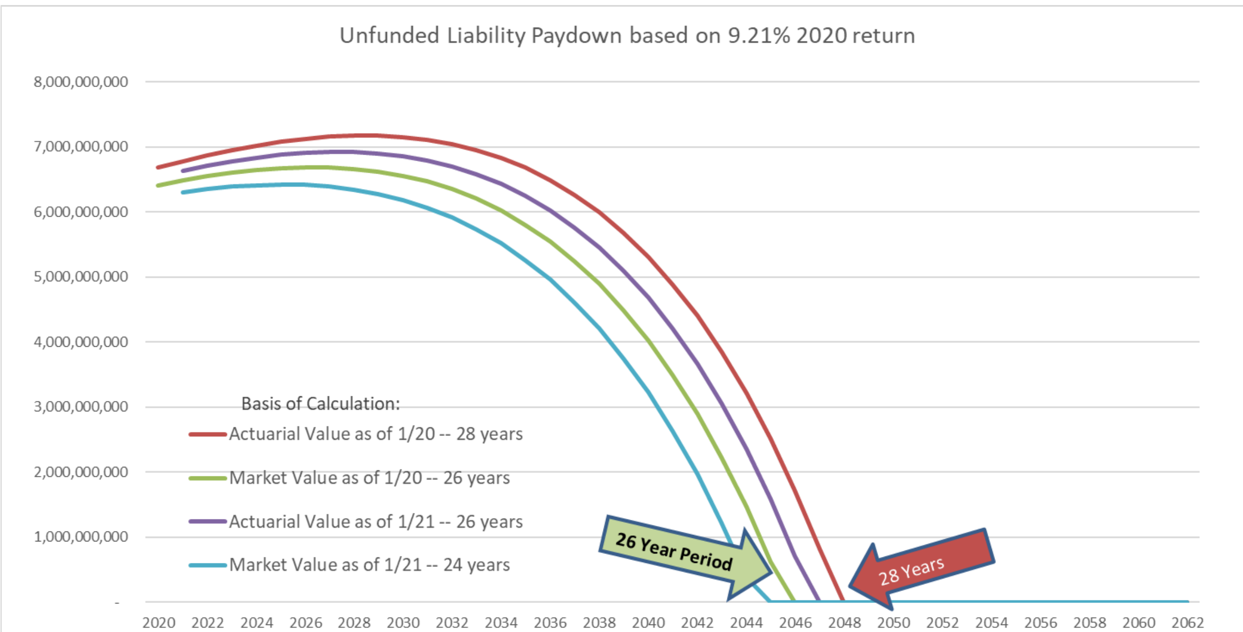
Although the assumed rate of investment return was reduced to 8.00%, when assumptions are next reviewed, we would anticipate another strong consideration in a reduction in the 8.00% assumed rate of investment return. This is for two related reasons.

First is that the low interest rate environment which began with the 2008 financial crisis shows no sign of abating. Long term treasury rates are still at near historic lows and long term inflation expectations remain at low rates. For example, Buck's 8.00% rate was built upon a pillar of 2.75% inflation. Long term inflation predictions generally call for an inflation rate somewhat less than this.

Second is that public plans around the country, based on their actuaries' advice, are reducing their assumed rates of investment return. OP&F's current 8.00% rate is among the highest currently. According to a February, 2021 NASRA (National Association of State Retirement Administrators) Issue Brief of 128 large plans, only 3, or less than 3% of the plans use an investment return as high as 8.00%. The average plan is using 7.18%.

LIKELIHOOD OF NECESSITY FOR FUTURE CHANGES

Based on the actuarial valuation as of January 1, 2020, CMC has projected that a statutorily required 30-year maximum funding period for statutory benefits will continue to be met. This is based on the Actuarial Value of Assets. We now know that investment returns were strong during 2020. Based on reported return of 9.21%, we estimate that the thirty-year maximum period **would continue to be met** as of January 1, 2021. Our calculations estimate that, all other things being equal, the funding period would drop to 26 years. Based on the market value of assets, that period would be 24 years. We estimated that the unfunded liability would decrease from $6.684 billion as of January 1, 2020 to $6.636 billion. These are illustrated by the following graph.



Of course, the January 1, 2021, actuarial valuation will measure all variables, some of which might turn out to be more or less favorable during 2020 than expected, such as payroll growth was during 2018. But all things being equal, we believe that it is not likely that the funding period as of January 1, 2021, will be longer than 30 years.

The funding period as of 2020 was 28 years. All other things being equal, because of the very strong 2019 returns (16.9%) and slightly beating expectations in 2020 (9.2% vs 8.0%), we calculate that this will decrease to 26 years. This does not consider the likely decrease in the expected rate of investment return, which we anticipate will push the funding period beyond 30 years.

HEALTH CARE BENEFITS

The actuarial analysis discussed above and presented in the CMC report are based on statutory pension benefits, the statutory Medicare Part B reimbursement benefit, and a contribution to retiree health care benefits of only 0.50%.

This level of 0.50% is not sufficient to provide meaningful retiree health benefits. CMC has not conducted a complete Actuarial Valuation of Retiree Health Care Benefits as of January 1, 2020, but has only prepared an Actuarial Solvency Projection of the HCSF. However, Buck reported key facts in its October, 2016 Actuarial Valuation of Retiree Health Care Benefits as of January 1, 2016. These include:

- The Normal Cost rate for the current level of benefits was 9.66% of pay
- The annual rate for amortizing the unfunded liability was 7.53% of pay
- The employer contribution toward the health care stabilization fund is 0.50% of pay
- The funded ratio (Assets divided by AAL) was 18%

From the 1/1/2020 Pension Actuarial Valuation, CMC reports that the normal cost for the Medicare Part B Premium Reimbursement benefit remains at 0.08%.

From the 1/1/2020 Solvency Projection, as shown in our table on page 6, CMC reports that:

- Employer contributions plus member contributions to HCSF were $12 million during 2019
- HCSF benefits and administrative expenses were $77 million during 2019

This all means that the current contribution rate is nowhere near adequate to fund the current level of healthcare benefits in the long term. The move to a stipend-based approach effective 2019 will help extend the solvency somewhat.

CONSISTENCY WITH PRIOR REVIEWS

In 2013, we were requested by ORSC to analyze OP&F's progress in meeting its funding objectives. As discussed in previous reports, several of our key findings from 2013 follow and are still germane:

> *In order to provide context, we reviewed several important policy and operational issues that will help the ORSC and the systems monitor the success of the initiatives taken and establish the groundwork for policy decisions affecting the need for, and timing of, possible additional initiatives.*
>
> *PTA/KMS agrees with the 30-year funding target for the retirement systems as a reasonable funding standard as noted in our report. However, we also recommended that the 30-year period begin in 2013 and decline by one year each year in the future so that Unfunded Liabilities are fully amortized by 2043. In other words, the funding period would decline to 29 years in 2014, 28 years in 2015, etc.*
>
> *In addition, we recommended a long-term solvency objective for the healthcare plans for now based on a defined minimum level of healthcare benefits, but eventually working toward an actuarially based advance-funding model.*

Meeting both of these funding objectives is important to avoid solving a deficiency in one benefit plan at the expense of the other.

It is important for ORSC to endorse these funding standards for both the retirement systems and the healthcare benefits (or agree to alternatives) to establish an objective basis to judge the funding progress of the systems.

ANNUAL ACTUARIAL VALUATIONS/ANALYSIS OF 30-YEAR FUNDING PROGRESS

PTA/KMS strongly supports the continuation of annual actuarial valuations of each system as well as an annual measurement of the success in meeting the funding objectives described above. To enhance the understanding of the actuarial valuation results and their effect on meeting the funding objectives, we recommend development of a standardized reporting format by each system as described below.

In addition, if the current annual actuarial valuation does not result in the funding objectives being met based on the conditions and actuarial methods in effect, we support the development of a detailed plan by each system specifying the additional benefit and/or employee contribution changes that will satisfy the funding objectives at that time. To be specific, unrecognized investment gains should not be counted in determining eventual compliance with the funding objectives because it is inconsistent with ignoring unrecognized investment losses. The use of a smoothed asset value is intended to provide a more stable asset value in determining the plan contribution requirements and lessen the volatility. In addition, forecasting the impact of better than expected investment and/or other system experience may be useful in assessing the extent of the current short fall as noted below, but by itself does not in our opinion meet the requirement of developing a detailed plan for corrective actions.

This disciplined approach will:

- *Continue the past annual reporting requirements for each system*
- *Identify positive and negative trends in a timely fashion*
- *Meet typical actuarial practices*
- *Provide policy makers with a meaningful and timely comparison and history of each system's progress in meeting the funding objectives each year*
- *Quantify any shortfall in an understandable format, and*
- *Provide the specifics of changes that would be required to meet the funding objectives.*

It also provides an opportunity for each system to assess and prioritize the changes that would be best suited for its membership based on current requirements as well as possible worst and best case future scenarios. Additionally, the communication of these results allows the membership of each system to prepare for potential future changes.

TIMING OF ADDITIONAL CHANGES/BOARD DISCRETION

*As noted above, PTA/KMS cautioned in our [*2012 comprehensive*] report that additional changes to the systems benefit structure and/or member funding would likely be required in the future to meet the funding objectives.*

To avoid frequent changes, we suggested that greater cuts than the minimum currently needed be considered, automatic cuts be implemented triggered by current funding measures, and reserves be established during good times to avoid reductions in poor times. PTA/KMS also encouraged limited discretion for the board of each system to make adjustments as needed. For example, we noted the following:

> *"**We strongly encourage an immediate and disciplined mechanism to adjust for future unanticipated actuarial experience** (favorable as well as unfavorable). This mechanism at the very least should include limited pension system board discretion to adjust benefits or contributions as included in several of the Senate bills. A more rigorous alternative would be a flexible Cost-of-Living-Adjustment based on funded position."*

PTA/KMS envisioned a dynamic and disciplined effort by the systems utilizing some or all of the above suggestions to meet the funding objectives at each actuarial valuation date or to immediately make additional changes if the funding objectives were not met starting with the initial valuation after the changes were implemented and fully reflected in the actuarial valuation.

Our rationale is as follows:

- *These pension reform plans were based on best efforts and conditions that existed at the time the plans were developed and finalized. Conditions change and several attempts may be required to find a structure that works long-term under varying economic conditions.*
- *The actuarial valuation process provides significant smoothing of favorable and unfavorable experience based on the asset valuation methodology and the 30-year funding of Unfunded Liabilities over an expanding payroll.*
- *The funding standards proposed are minimum standards*
- *Advisable changes are best made sooner rather than later*
- *If the benefit reductions result in the system exceeding the funding objectives in the future, consideration can be given to reversing a portion or all of the changes*

Our thoughts with regard to proposing limited board discretion for benefit and contribution changes were as follows:

- *Limited changes could be implemented on a timely basis*
- *The responsibility for meeting the funding objectives would be shared by each board as part of its fiduciary responsibility*
- *Changes would be made to meet the ORSC approved funding standards*
- *Potential changes would be continuously assessed and a priority for necessary changes maintained by the board to facilitate prompt action*

PTA/KMS does not agree with any restrictions on the time periods in which board action may be taken.

OHIO POLICE AND FIRE PENSION FUND

SB 340 implemented the OP&F 30-year plan and also included some unique reporting and operational provisions that do not meet the uniform recommendations discussed above. Specifically, SB 340 provides for:

- *Triennial, rather than annual, actuarial valuations beginning in 2013*
- *Triennial, rather than annual, development of a plan to meet the 30-year funding objective (if not currently met) also beginning in 2013*
- *Limited board discretion to make changes to member contribution rates and retirement eligibility provisions, but not permitted before 2017 and then only every five years thereafter following the experience analysis*

PTA/KMS recommends that these provisions be amended to meet the annual reporting and disclosure requirements discussed above and remove the time restriction on board action as explained above.

Our review of the OP&F 30-year plan in our July, 2012 report concluded that the retirement changes were nearly adequate to meet the funding objective at the 2010 actuarial valuation date, but as of 2011 would not accomplish the twin funding objectives for both retirement and health care benefits long-term. We concluded:

> *"This was due to a variety of factors, including:*
>
> - *The 2010 30-year plan was not implemented as of 2010*
> - *The 2010 30-year plan was calculated on a long-term basis as if member contributions of 12.25% commenced in 2010 rather than being phased in through 2015*
> - *The 2010 30-year plan resulted in a health care contribution which was only projected to be solvent until 2027, not indefinitely as we would recommend*
> - *Even though both 2009 and 2010 were good investment years, the 2010 30-year plan did not reflect even greater actuarial investment losses (from 2008) expected to be recognized after January 2010. These totaled $1.6 billion as of January 2011*
>
> *As a result, further reductions in benefits of approximately 8% must occur in order to maintain the funding objectives based on conditions as of January 1, 2011, and assuming all assumptions are met after that time."*

PTA/KMS also concluded that further benefit reductions would likely be required after the January 1, 2012 actuarial valuation because of investment results during 2011 and earlier.

This was confirmed in Buck's December 12, 2012 report. After the provisions of SB 340 are taken into account, the funding objectives are not met for either program as of January 1, 2012, and the deficit has increased primarily due to 2012 and earlier recognized investment results.

…

SUMMARY OF CONCLUSIONS

- *We agree with* Buck's *calculations that based on investment returns through mid-2013 and a modest return for the last half of 2013 and healthcare contributions reduced to 2.85% of pay, the retirement plan is expected to be fully funded within 30 years, but the annual actuarial valuations will continue to show a short fall for some time due to the smoothing techniques and the healthcare plan would be insolvent in 18 years.*
- *Although there is no statutory requirement for health care funding, OP&F does not meet our recommended threshold for solvency.*
- *We encourage the ORSC to develop a more clear definition of what it means to have met the thirty year funding requirement. This would include the following parameters:*
    - *Based on the most recent actuarial valuation, and under the current contribution rates and schedule of benefits, employee contribution rates and healthcare contribution rates, the pension is expected to be 100% funded by 2043.*
    - *Based on the above, the healthcare fund is expected to remain solvent for that time.*
    - *This analysis will be based on an actuarial value (smoothed value) of assets for the retirement plan*
- *We recommend that this determination be made annually, not triennially and each system follow a uniform format for reporting to the ORSC its current status*
- *If the funding objectives are not met currently, each system should provide a detailed plan for meeting the objectives in the future*

We believe that for the most part, these conclusions are still relevant. OP&F has further reduced the allocation of contribution toward retiree health care benefits to 0.50% of payroll, and suspended the anticipated growth in Medicare Part B premium reimbursement. While the increased allocation toward pensions as well as strong investment performance has improved the statutory benefit funding period, it has further jeopardized retiree health benefits. As mentioned previously, this situation is not likely to improve on its own. Some reduction in benefits or increase in contributions is likely to be required in 2022.

POTENTIAL ORSC RECOMMENDATIONS

It is encouraging that OP&F is meeting the target funding period of 30 years for statutory benefits. However, the 30-year funding period required by 742.16 will likely not be satisfied in 2022 once the triennial actuarial valuation and 5-year experience study are conducted. ORSC and OP&F may wish to begin to encourage review of potential changes which may be necessary.

The improved funding period in recent years was partly due to the increase in allocation of employer contributions toward statutory pension benefits, leaving reduced contributions toward health care. This has the impact of further jeopardizing the solvency of the retiree health trust. ORSC may wish to encourage further analysis of potential changes to rectify this long term problem.

RECAP OF FINDINGS

- OP&F reported a funding period of 28 years. We confirm the calculations.
- If based on the market value of assets as of January 1, 2020, the funding period is 26 years.

- Although this is a substantial improvement over the 2012 and 2013 situation, it is no improvement since 2015, when the plan was projected to be fully funded by 2044.
- Because 2018 investment returns were poor, followed by strong 2019 returns, and these have not yet been fully phased-in to the Actuarial Value of Assets, we estimate that, all other things being equal, the thirty-year period will also be met as of January 1, 2021.
- However, the assumed rate of investment return of 8.00% is very likely to be decreased. This would increase the unfunded actuarial liability and probably cause the 30-year period to not be met in January, 2022. We expect that this would trigger a need for further modifications.

Actuarial calculations were performed under my direction. I am a Member of the American Academy of Actuaries and qualified to render this actuarial opinion. We are available to discuss these findings and recommendations in more detail.

Sincerely,

WB Fornia

William B. Fornia, FSA

Cc: Linda Bournival KMS

APPENDIX I – Funding Period Calculations

Replication of CMC Calculation – Based on Actuarial Value of Assets

Year	Plan Year	Outstanding Balance at Beginning of Year (UAAL)	Assumed Amortization Contribution Rate	Assumed Payroll @ 3.75% Growth Rate	Mid-Year Amortization Contribution Amount	Outstanding Balance at End of Year (UAAL)
1	2020	6,684,160,703	17.17%	2,442,494,262	421,296,887	6,783,064,960
2	2021	6,783,064,960	17.25%	2,521,875,325	436,986,689	6,873,528,513
3	2022	6,873,528,513	17.33%	2,603,836,274	452,735,690	6,954,590,047
4	2023	6,954,590,047	17.39%	2,688,460,952	469,046,808	7,025,187,834
5	2024	7,025,187,834	17.44%	2,775,835,933	485,390,241	7,084,212,511
6	2025	7,084,212,511	17.48%	2,866,050,601	502,016,780	7,130,385,142
7	2026	7,130,385,142	17.51%	2,959,197,246	519,211,352	7,162,345,530
8	2027	7,162,345,530	17.53%	3,055,371,156	536,690,783	7,178,560,158
9	2028	7,178,560,158	17.55%	3,154,670,719	554,757,961	7,177,336,920
10	2029	7,177,336,920	17.57%	3,257,197,517	573,110,111	7,156,730,830
11	2030	7,156,730,830	17.59%	3,363,056,437	592,402,184	7,114,633,606
12	2031	7,114,633,606	17.60%	3,472,355,771	611,999,074	7,048,733,663
13	2032	7,048,733,663	17.61%	3,585,207,333	632,244,038	6,956,570,556
14	2033	6,956,570,556	17.61%	3,701,726,572	653,158,501	6,835,528,446
15	2034	6,835,528,446	17.62%	3,822,032,685	674,386,152	6,682,659,057
16	2035	6,682,659,057	17.62%	3,946,248,747	696,694,445	6,494,665,765
17	2036	6,494,665,765	17.62%	4,074,501,832	719,337,014	6,267,999,158
18	2037	6,267,999,158	17.63%	4,206,923,141	743,132,021	5,998,747,988
19	2038	5,998,747,988	17.63%	4,343,648,143	767,283,812	5,682,638,342
20	2039	5,682,638,342	17.64%	4,484,816,708	792,664,605	5,315,023,136
21	2040	5,315,023,136	17.65%	4,630,573,251	818,884,707	4,890,881,071
22	2041	4,890,881,071	17.66%	4,781,066,882	845,971,863	4,404,800,342
23	2042	4,404,800,342	17.67%	4,936,451,555	873,954,738	3,850,913,135
24	2043	3,850,913,135	17.67%	5,096,886,231	902,862,942	3,222,806,999
25	2044	3,222,806,999	17.68%	5,262,535,033	932,727,064	2,513,551,167
26	2045	2,513,551,167	17.69%	5,433,567,422	963,040,693	1,715,705,383
27	2046	1,715,705,383	17.70%	5,610,158,363	994,895,013	821,156,416
28	2047	821,156,416	17.70%	5,792,488,510	1,027,802,651	0

Resulting Funding Period = 28 Years

APPENDIX I – Funding Period Calculations (continued)

Alternate Calculation – Based on Market Value of Assets

Year	Plan Year	Outstanding Balance at Beginning of Year (UAAL)	Assumed Amortization Contribution Rate	Assumed Payroll @ 3.75% Growth Rate	Mid-Year Amortization Contribution Amount	Outstanding Balance at End of Year (UAAL)
1	2020	6,407,692,589	17.17%	2,442,494,262	421,296,887	6,484,479,397
2	2021	6,484,479,397	17.25%	2,521,875,325	436,986,689	6,551,056,105
3	2022	6,551,056,105	17.33%	2,603,836,274	452,735,690	6,606,319,846
4	2023	6,606,319,846	17.39%	2,688,460,952	469,046,808	6,649,056,018
5	2024	6,649,056,018	17.44%	2,775,835,933	485,390,241	6,677,990,149
6	2025	6,677,990,149	17.48%	2,866,050,601	502,016,780	6,691,664,990
7	2026	6,691,664,990	17.51%	2,959,197,246	519,211,352	6,688,527,767
8	2027	6,688,527,767	17.53%	3,055,371,156	536,690,783	6,666,836,974
9	2028	6,666,836,974	17.55%	3,154,670,719	554,757,961	6,624,675,881
10	2029	6,624,675,881	17.57%	3,257,197,517	573,110,111	6,559,856,908
11	2030	6,559,856,908	17.59%	3,363,056,437	592,402,184	6,470,009,770
12	2031	6,470,009,770	17.60%	3,472,355,771	611,999,074	6,352,539,920
13	2032	6,352,539,920	17.61%	3,585,207,333	632,244,038	6,204,681,314
14	2033	6,204,681,314	17.61%	3,701,726,572	653,158,501	6,023,488,064
15	2034	6,023,488,064	17.62%	3,822,032,685	674,386,152	5,805,655,445
16	2035	5,805,655,445	17.62%	3,946,248,747	696,694,445	5,547,501,864
17	2036	5,547,501,864	17.62%	4,074,501,832	719,337,014	5,245,062,145
18	2037	5,245,062,145	17.63%	4,206,923,141	743,132,021	4,893,976,014
19	2038	4,893,976,014	17.63%	4,343,648,143	767,283,812	4,489,484,610
20	2039	4,489,484,610	17.64%	4,484,816,708	792,664,605	4,026,417,105
21	2040	4,026,417,105	17.65%	4,630,573,251	818,884,707	3,499,186,557
22	2041	3,499,186,557	17.66%	4,781,066,882	845,971,863	2,901,770,267
23	2042	2,901,770,267	17.67%	4,936,451,555	873,954,738	2,227,640,654
24	2043	2,227,640,654	17.67%	5,096,886,231	902,862,942	1,469,672,720
25	2044	1,469,672,720	17.68%	5,262,535,033	932,727,064	620,166,146
26	2045	620,166,146	17.69%	5,433,567,422	963,040,693	0

Resulting Funding Period = 26 Years