January 21, 2025

Ms. Bethany Rhodes
Executive Director
Ohio Retirement Study Council

Subject: Review of Ohio Police and Fire Funding Period and Actuarial Status as of January 2024

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 relative to the benefits provided under 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 29.77 years.
II. Based on 2024 investment returns of approximately 7.50% and scheduled recognition of deferred investment losses under the asset smoothing methodology, the unfunded liability is projected to increase to about $8.9 billion, with a funding period of 32 years (from January 1, 2025).

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 relative to the benefits provided. 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.

Cavanaugh MacDonald Consulting, LLC (CMC), actuary for OP&F, made a calculation that the unfunded liability for the statutory pension benefits would be fully amortized over a period of 29.77 years, based on the current level of contributions. The UAAL of $8.4 billion as of January 1, 2024 would decline to zero by December 31, 2053. We were able to replicate the CMC calculations of the projection of the unfunded actuarial accrued liability funding period based on their actuarial methods, assumptions and level of contributions.

We note that CMC implemented a change in the administrative expense assumption used to calculate the funding period by removing the GASB 67 and 75 OPERS expense and including the actual contributions to OPERS. We believe the basis for the administrative expense assumption is reasonable.

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. The most recent triennial analysis was based on the January 1, 2022 actuarial valuation, and showed the funding period was 28.07 years, so no 30-year funding plan was required. The next analysis will be performed based on the January 1, 2025 actuarial valuation.

Based on 2024 expected return of 7.50% and the scheduled recognition of the next set of deferred investment losses under the asset smoothing methodology used in the funding policy, we calculated that the thirty-year maximum period would not be met as of January 1, 2025. Taking into account these factors would change the projection to show an amortization period of 32 years.

Conclusion

The conclusion of our 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 2024 and beyond is that the calculation of a 29.77-year OP&F funding period is reasonable.

We are happy to discuss this further with ORSC staff, the Council, and OP&F.

Sincerely,

William B. Fornia, FSA

Linda L. Bournival, FSA

Cc: Tom Vicente, Bolton Partners

This report demonstrates the findings discussed in our summary and other issues related to the Ohio Police & Fire Pension Fund's (OP&F) 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 between Police and Fire
- Potential future changes to actuarial assumptions
- Likelihood of necessity for future changes in benefits or contributions
- Health care benefits
- Potential ORSC recommendations

BACKGROUND

Cavanaugh MacDonald Consulting, LLC (CMC), actuary for OP&F, issued the report on Actuarial Valuation of Pension Benefits as of January 1, 2024 in October 2024. 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, 2024)
- 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

Cavanaugh MacDonald Consulting, LLC (CMC), actuary for OP&F, made a calculation that the unfunded liability for the statutory pension benefits would be fully amortized over a period of 29.77 years, based on the current level of contributions. The UAAL of $8.4 billion as of January 1, 2024 would decline to zero by December 31, 2053, three years later than projected in the January 1, 2023 valuation. We were able to replicate the CMC calculations of the projection of the UAAL funding period based on their actuarial methods, assumptions and level of contributions.

These calculations were based on a smoothed Actuarial Value of Assets (AVA) of $17.962 billion. The true Market Value of Assets (MVA) is $16.903 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. We calculate that if the calculation had been based on the MVA, the funding period would have been 38 years. Recall that this calculation as of the beginning of 2023 produced a funding period of 41 years. This demonstrates the higher volatility of this measure.

The UAAL is $9.5 billion, based on the unsmoothed MVA. The AVA is $1.059 billion more than the current (unsmoothed) MVA. Because the smoothing impact of this $1.059 billion 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, 2024 is exactly as expected, the unfunded liability will be completely amortized in 2062, a period of 38 years.

When including the liabilities for statutory Medicare Part B reimbursement, the AAL grows by $241 million. The CMC methodology assumes that $241 million of the $787 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 $241 million of the $787 million total represents 31% 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 $241 million as of January 1, 2024. 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 with a fixed dollar subsidy level, which reduces the outflows from the HCSF.

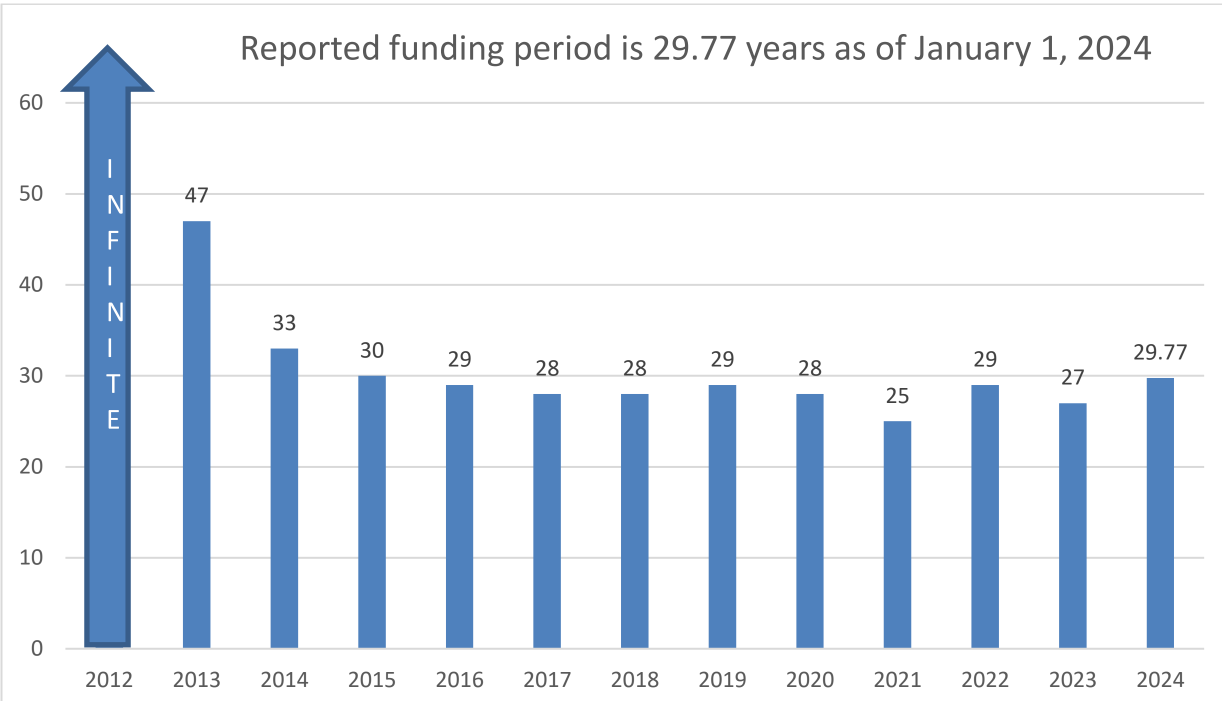
Our calculations are summarized in the table below and Appendix I. All dollar figures are in $billions as of January 1, 2024.

Funding Period on Various Bases (values in $billions)

Statutory Benefits Considered	Asset Basis	Actuarial Liability	Assets	UAAL	Funding Period
Pension Only	AVA	$26.362	$17.962	$8.400	29.77 years
Pension Only	MVA	26.362	16.903	9.459	38.05 years
Pension and Medicare Part B	AVA	26.604	17.962	8.641*	31.51 years
Pension and Medicare Part B	MVA	26.604	16.903	9.700*	40.10 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 since it was 47 years in 2013. 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. There has been strong improvement since 2013, but no sustained improvement since 2015. Under the adopted methodology the funding period is expected to reduce by one each year as the date of anticipated full funding approaches. However with the exception of 2021 the amortization period has hovered around 29 years since 2016. The historical funded ratios 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 funding 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, 2022 actuarial valuation, and showed the funding period was 28.07 years, so no 30-year funding plan is required. The next analysis will be performed based on the January 1, 2025 actuarial valuation.*

The funding period reported by CMC is now 29.77 years. The funding period is expected to increase as investment returns below the assumed level for 2022 are gradually recognized into the actuarial value of assets. If future returns were to outperform the actuarial assumption that would shorten the period over time.

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 specific traditional use of the EAN method and its corresponding amortization period. Because the nature of the traditional EAN method does not incorporate important characteristics of the OP&F (and other Ohio plans) funding structure, CMC has modified this method in a manner which we find is reasonable and appropriate.

CMC calculates an employer amortization contribution rate toward the unfunded liability of 16.85% in its Table 1 Summary of Actuarial Valuation Results. CMC then goes on to demonstrate that the 16.85% amortization rate with anticipated future adjustments is sufficient to amortize the unfunded liability over 29.77 years. This is demonstrated in CMC's Table 7 and verified by PTA/KMS in Appendix 1 of this report. Note that the 16.85% rate is projected to decrease to 16.46% by 2053. This decrease is expected to occur because the normal cost rate for future members is projected to increase primarily due to the impact of generational mortality improvement which OP&F implemented in 2012. This cost increase is 0.39% 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 a fixed period based on AVA. 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 on page 5, we calculated the funding period using both AVA and MVA. At this point in the investment cycle, the AVA exceeds the MVA. This is because the 2022 significant investment loss, offset by the smaller 2021 and 2023 investment gains, have not been fully recognized in AVA. CMC's projection calculations used the (higher) AVA. Using this approach creates an implicit assumption that average investment returns in the future will exceed the 7.50% stated actuarial assumption. In general, we believe it also important to consider the true MVA. Using the true MVA at January 1, 2024 as the starting point would result in a projection that the funding period for statutory benefits as 38 years. The use of the lower MVA lengthens the period by over 8 years.

In a potential future year when decisions may be 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 to avoid the implicit assumption of a higher average investment return. 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 ($787 million) to cover these liabilities ($241 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 $241 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 0.06% has been calculated as the normal cost for the Medicare Part B benefits. This means that 0.44% 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 0.06% contribution and the $241 million AAL attributed to Medicare Part B reimbursements are not dedicated or segregated, but comingled with other HCSF assets and liabilities.

During 2023 and 2022, 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	2023	2022
Market Value of HCSF as of January 1	$789,641	$966,702
Contributions		
Employer	14,118	13,381
Member Premiums	0	0
Total	14,118	13,381
Benefits and Administrative Expenses	-86,124	-88,799
Investment Income	69,710	-101,830
Other Income	61	186
Market Value of HCSF as of December 31	787,407	789,641

In very approximate terms, CMC is projecting that the HCSF is decreasing each year by $86 million due to benefits and increasing by $14 million due to contributions plus other income. If investment return on the $787 million fund is 7.5% as assumed, that would generate roughly $59 million. So the HCSF was expected to drop by about $13 million per year. In particular, CMC projects insolvency in 2041 if returns are 7.5% and in 2038 if returns are 5.5%.

OP&F moved to an Exchange solution effective January 1, 2019. This approach 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 they dropped from $219 million in 2018 to $77 million in 2019. Currently they are $86 million in 2023.

Prior to the 2018 investment losses and the move to an Exchange solution, the HCSF was projected to be depleted by 2034. Depletion is now projected in 2041. Note that this is twelve 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 Firefighters employer contributions, it could be argued that Firefighters employers are paying a larger share of the unfunded liability than are Police employers. While this is accurate, the Police and Firefighters components of OP&F are completely merged and the assets are not explicitly separated between Police and Firefighters. CMC does do an allocation of assets between Police and Firefighters 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 Police and Firefighters asset accounts. Consequently, each year the assets would be allocated between the Police and Firefighters 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 29.77 years (based on AVA), Firefighters would be fully funded in 20 years while Police would be fully funded only after 48 years. This also assumes that Firefighters UAAL amortization contributions (currently 19.06% of pay) would not be required after 20 years, but would either cease, or be directed toward retiree healthcare benefits. Under the current CMC projection approach, both Police and Firefighters employer contributions would continue toward the UAAL until OP&F is fully funded.

CHANGES TO ACTUARIAL ASSUMPTIONS

The OP&F Board voted to reduce their assumed rate of return from 8.00% to 7.50% in February, 2022. This analysis reflects the reduction and we have reviewed certain calculations from the actuary and find them consistent with our calculations. Although the assumed rate of investment return was reduced to 7.50%, when assumptions are next reviewed, there will likely be another consideration in a reduction in the 7.50% assumed rate of investment return. This is for two related reasons.

First is that although the low interest rate environment which began with the 2008 financial crisis has abated somewhat as a result of post-pandemic inflation increases, long term treasury rates are still historically low, and long-term inflation expectations remain lower than in prior decades. For example, CMC's 7.50% rate was built upon a pillar of 2.75% inflation. Long-term inflation predictions tend to call for an inflation rate somewhat less than this, notwithstanding the higher inflation following the pandemic.

Second is that public plans around the country, based on their own analysis and advice from service providers such as actuaries and investment advisors, have reduced their assumed rates of investment return. According to data in March 2024 from NASRA (National Association of State Retirement Administrators), only three plans of 131 surveyed, have an investment return as high as 7.5%. And we understand that at least one of the other two plans has decreased their rate. According to the March, 2024 Issue Brief, the average plan is using 6.91% for their nominal investment return assumption and 2.47% for their inflation assumption.

LIKELIHOOD OF NECESSITY FOR FUTURE CHANGES

Based on the actuarial valuation as of January 1, 2024, CMC has projected that a statutorily required 30-year maximum funding period for statutory benefits will continue to be met.

We expect that if 2024 returns are considered, the funding period will possibly exceed 30 years in 2025.

We expanded our estimate to recognize estimated investment return in 2024 and the asset smoothing method, but our estimates do not reflect any unanticipated experience during 2024 or further changes in actuarial assumptions. It is not unusual for these other changes to impact the funding period by several years.

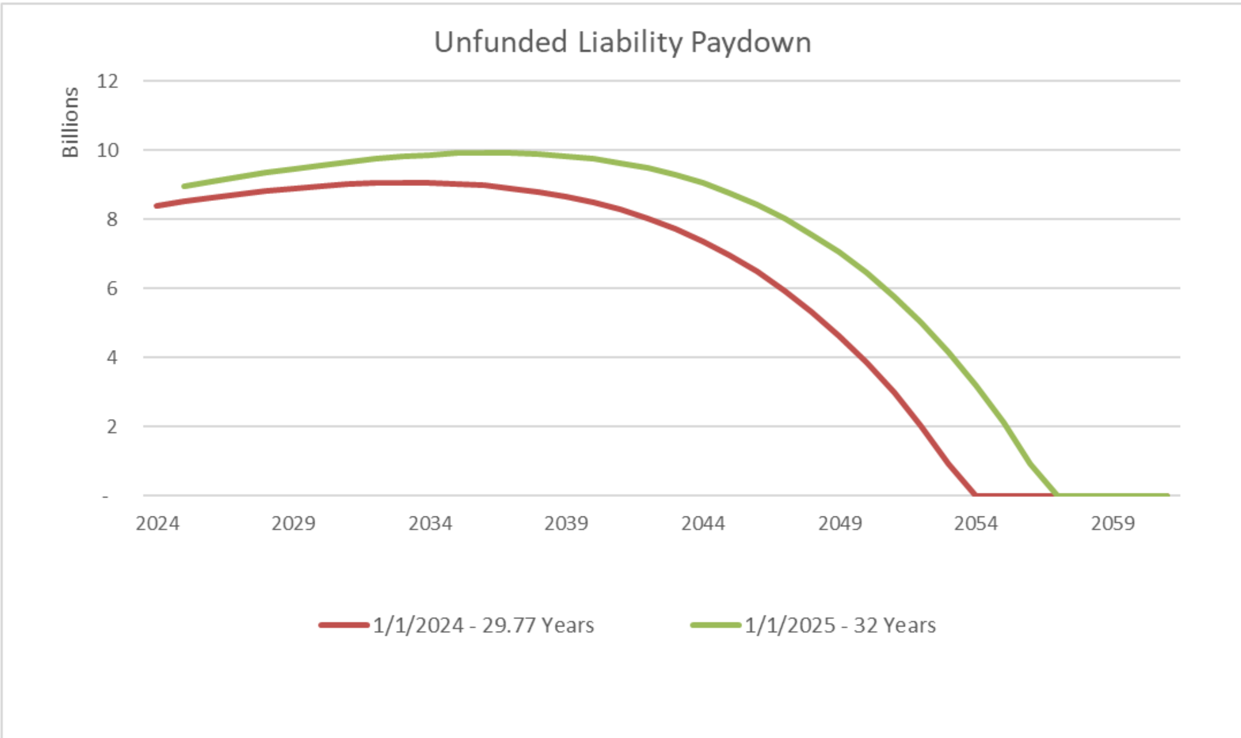
Based on data from OP&F through November 2024 and general market data, we believe that the assumed rate of 7.50% is a reasonable assumption for actual returns during 2024. Hopefully OP&F 2024 return will exceed 7.50%, but we do not anticipate that it will be a substantial excess. OP&F exceeded the 7.5% target by 1.78% in 2023 and missed the 7.5% target by 18.5% in 2022; but beat the 8% target by 11% in 2021 and by 1% in 2020. The asset smoothing method has not yet completely reflected these two good years (2021 and 2023) and partially reflected the bad 2022 year. Based on 2024 expected return of 7.50%, we calculated that the thirty-year maximum period would not be met as of January 1, 2025, increasing to 32 years.

As of January 1, 2025, we estimate that the asset smoothing method will result in approximately $713 million of investment return losses which are not reflected in the actuarial value of assets. As a consequence, the "return" on the AVA will only be about 5%, creating a loss for the UAAL. This loss is not accounted for in the CMC analysis.

The following table summarizes our estimates:

Actuarial Valuation Date as of January 1	Expected Return on Plan Assets	Estimated Investment Return in 2024	Assets Recognized	Unfunded Liability	Funding Period
2024	7.5%	7.50%	AVA	$8.4 billion	29.77 years
2024	7.5%	7.50%	MVA	$9.5 billion	38 years
2025	7.5%	7.50%	AVA	$8.9 billion	32 years
2025	7.5%	7.50%	MVA	$9.7 billion	37 years

The graph below shows that the funding period is 29.77 years as of January 1, 2024 based on a 7.5% return and the actuarial value of assets (AVA) and is estimated to grow to 32 years as of January 1, 2025, based on AVA, once another year of returns for 2024 is included in the smoothed assets.



As mentioned above, the January 1, 2025, actuarial valuation will lead to results which will be more or less favorable than our estimates above. But all things being equal, we believe that it is likely that the funding period as of January 1, 2025, could be more than 30 years, and likely that the funding period in future years will be longer than 30 years. Note that in these lines, the unfunded liability increases for a few years before eventually decreasing to zero. This is what is known as “negative amortization” where the contributions are not enough to cover the ongoing costs plus interest on the unfunded liability. Although permitted by Ohio Statute, this is a practice that is to be noted in future financial statements.

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, 2024, 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 January 1, 2024 Pension Actuarial Valuation, CMC reports that the normal cost for the Medicare Part B Premium Reimbursement benefit decreased from 0.07% to 0.06%.

From the January 1, 2024 Solvency Projection, as shown in our table on page 8, CMC reports that:

- Employer contributions plus member contributions to HCSF were $14 million during 2023
- HCSF benefits and administrative expenses were $86 million during 2023

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 has helped extend the solvency somewhat.

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 2025 once the triennial actuarial valuation and reflection of 2024 investment returns at or near expectations are incorporated. 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

- The reported funding period is 29.77 years and we agree.
- We have replicated the calculations in OP&F's funding period determination.
- 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 investment returns were strong for the years 2019 through 2021 but weak for 2022 and these have not yet been fully phased-in to the AVA, the thirty-year period may not be met as of January 1, 2025, even though returns for 2023 were slightly higher than the assumed rate.
- We expect that further modifications would be necessary to maintain 30-year funding.
- The current level of contributions is insufficient to cover interest on the unfunded liability in the short term.

Actuarial calculations were performed under the direction of William Fornia, FSA and Linda Bournival, FSA. We are Members 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.

APPENDIX I – Funding Period Calculations

Replication of CMC Calculation – Based on January 1, 2024 Valuation

Year	Plan Year	Outstanding Balance at Beginning of Year (UAAL)	Assumed Amortization Contribution Rate	Assumed Payroll @ 3.25% Growth Rate	Mid-Year Amortization Contribution Amount	Outstanding Balance at End of Year (UAAL)
1	2024	$ 8,400,186	16.85%	$ 2,946,060	$ 496,288	$ 8,515,637
2	2025	8,515,637	16.83%	3,041,807	512,047	8,623,408
3	2026	8,623,408	16.83%	3,140,666	528,533	8,722,169
4	2027	8,722,169	16.82%	3,242,737	545,350	8,810,901
5	2028	8,810,901	16.81%	3,348,126	562,755	8,888,241
6	2029	8,888,241	16.79%	3,456,940	580,557	8,952,924
7	2030	8,952,924	16.78%	3,569,291	599,064	9,003,270
8	2031	9,003,270	16.77%	3,685,293	618,109	9,037,647
9	2032	9,037,647	16.76%	3,805,065	637,790	9,054,196
10	2033	9,054,196	16.75%	3,928,730	658,160	9,050,866
11	2034	9,050,866	16.74%	4,056,413	679,048	9,025,629
12	2035	9,025,629	16.72%	4,188,247	700,387	8,976,375
13	2036	8,976,375	16.71%	4,324,365	722,524	8,900,475
14	2037	8,900,475	16.70%	4,464,907	745,474	8,795,087
15	2038	8,795,087	16.69%	4,610,016	769,239	8,657,155
16	2039	8,657,155	16.67%	4,759,842	793,690	8,483,526
17	2040	8,483,526	16.66%	4,914,536	818,832	8,270,808
18	2041	8,270,808	16.65%	5,074,259	844,769	8,015,244
19	2042	8,015,244	16.63%	5,239,172	871,521	7,712,775
20	2043	7,712,775	16.62%	5,409,445	899,224	7,358,897
21	2044	7,358,897	16.62%	5,585,252	928,264	6,948,370
22	2045	6,948,370	16.62%	5,766,773	958,332	6,475,878
23	2046	6,475,878	16.61%	5,954,193	989,106	5,936,042
24	2047	5,936,042	16.60%	6,147,704	1,020,626	5,323,038
25	2048	5,323,038	16.59%	6,347,505	1,052,885	4,630,612
26	2049	4,630,612	16.57%	6,553,799	1,085,706	3,852,225
27	2050	3,852,225	16.54%	6,766,797	1,119,427	2,980,496
28	2051	2,980,496	16.52%	6,986,718	1,153,917	2,007,626
29	2052	2,007,626	16.49%	7,213,786	1,189,250	925,159
30	2053	925,159	16.46%	7,448,234	1,225,920	-
31	2054	-	16.43%	7,690,302	1,263,400	-
32	2055	-	16.40%	7,940,237	1,302,214	-
33	2056	-	16.37%	8,198,295	1,342,221	-

Resulting Funding Period = 29.77 Years

APPENDIX I – Funding Period Calculations (continued)

Projection – Based on January 1, 2025

Year	Plan Year	Outstanding Balance at Beginning of Year (UAAL)	Assumed Amortization Contribution Rate	Assumed Payroll @ 3.25% Growth Rate	Mid-Year Amortization Contribution Amount	Outstanding Balance at End of Year (UAAL)
1	2024	$ 8,400,186	16.85%	$ 2,946,060	$ 496,288	$ 8,941,035
1	2025	8,941,035	16.83%	3,041,807	512,047	9,080,711
2	2026	9,080,711	16.83%	3,140,666	528,533	9,213,770
3	2027	9,213,770	16.82%	3,242,737	545,350	9,339,372
4	2028	9,339,372	16.81%	3,348,126	562,755	9,456,347
5	2029	9,456,347	16.79%	3,456,940	580,557	9,563,638
6	2030	9,563,638	16.78%	3,569,291	599,064	9,659,788
7	2031	9,659,788	16.77%	3,685,293	618,109	9,743,403
8	2032	9,743,403	16.76%	3,805,065	637,790	9,812,884
9	2033	9,812,884	16.75%	3,928,730	658,160	9,866,456
10	2034	9,866,456	16.74%	4,056,413	679,048	9,902,388
11	2035	9,902,388	16.72%	4,188,247	700,387	9,918,891
12	2036	9,918,891	16.71%	4,324,365	722,524	9,913,679
13	2037	9,913,679	16.70%	4,464,907	745,474	9,884,281
14	2038	9,884,281	16.69%	4,610,016	769,239	9,828,039
15	2039	9,828,039	16.67%	4,759,842	793,690	9,742,226
16	2040	9,742,226	16.66%	4,914,536	818,832	9,623,911
17	2041	9,623,911	16.65%	5,074,259	844,769	9,469,829
18	2042	9,469,829	16.63%	5,239,172	871,521	9,276,454
19	2043	9,276,454	16.62%	5,409,445	899,224	9,039,852
20	2044	9,039,852	16.62%	5,585,252	928,264	8,755,397
21	2045	8,755,397	16.62%	5,766,773	958,332	8,418,432
22	2046	8,418,432	16.61%	5,954,193	989,106	8,024,288
23	2047	8,024,288	16.60%	6,147,704	1,020,626	7,567,903
24	2048	7,567,903	16.59%	6,347,505	1,052,885	7,043,842
25	2049	7,043,842	16.57%	6,553,799	1,085,706	6,446,448
26	2050	6,446,448	16.54%	6,766,797	1,119,427	5,769,286
27	2051	5,769,286	16.52%	6,986,718	1,153,917	5,005,575
28	2052	5,005,575	16.49%	7,213,786	1,189,250	4,147,955
29	2053	4,147,955	16.46%	7,448,234	1,225,920	3,187,989
30	2054	3,187,989	16.43%	7,690,302	1,263,400	2,117,167
31	2055	2,117,167	16.40%	7,940,237	1,302,214	925,792
32	2056	925,792	16.37%	8,198,295	1,342,221	-
33	2057	-	16.91%	8,464,739	1,431,444	-
34	2058	-	17.43%	8,739,843	1,523,567	-

Resulting Funding Period = 32 Years