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STATE OF MICHIGAN
DEPARTMENT OF TREASURY
LANSING

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DATE: December 17, 2021

TO: State of Michigan Local Governments

FROM: Rachael Eubanks, State Treasurer *Rachael Eubanks*

SUBJECT: Public Act 202 of 2017: Selection of Uniform Assumptions for Fiscal Year 2022

Summary:

A key component of Public Act 202 of 2017 (the Act) requires the State Treasurer to annually establish uniform actuarial assumptions of retirement systems that include, but are not limited to, investment returns, salary increase rates, mortality tables, discount rates, and health care inflation. Uniform Assumptions reported by local units are used for reporting purpose only and are not used to determine a local units underfunded status under PA 202. The reporting obtained using uniform assumptions allows all systems to be compared on a standard basis and provides a more conservative analysis of legacy debt.

Fiscal year 2019 was the first year for which uniform assumptions were published and fiscal year 2020 was the first full year that all local units had to submit the Retirement System Annual Report (Form 5572) using uniform assumptions. The uniform assumptions being recommended within this memo would be used for Fiscal Year 2022 reporting.

The most significant change being recommended to the fiscal year 2022 uniform assumptions is a reduction in the assumed investment rate of return and discount rate from 7.0% to 6.85%. Since uniform assumptions were first implemented for fiscal year 2019, the rate being used has been 7.0%. Lowering the rate to 6.85% is consistent with trends across public pension systems in lowering the assumed future rate of return on investments.

Impact of Uniform Assumptions Compared to Funding Assumptions:

For most local governments, fiscal year 2020 reporting included assets, liabilities, and actuarially determined contributions (ADC) using the uniform actuarial assumptions released in all of 2019. An analysis of key data points used to determine underfunded status¹ compares assumptions utilized by local governments for funding purposes with the data calculated and reported using the uniform actuarial assumptions.

¹ [MCL 38.2805](#)

FY 2020 Pension Reporting		
	Funded Ratio	ADC/Governmental Revenues
FY 2020 Audited Financial Data ²	73.3%	4.9%
FY 2020 Uniform Assumption Data ³	67.4%	6.4%

FY 2020 Retiree Health Care (OPEB) Reporting		
	Funded Ratio	ADC/Governmental Revenues
FY 2020 Audited Financial Data	27.4%	2.4%
FY 2020 Uniform Assumption Data	26.7%	2.5%

As demonstrated in the tables above, uniform assumption calculations, on average, do provide a more conservative outlook of local government retirement reporting data. The impact of uniform assumptions tended to be more pronounced in pension than in OPEB. Median funded ratios for pension systems decreased by 5.9% when using uniform assumptions while the median ADC as a percentage of governmental revenues increased by 1.5%. While less impactful, median OPEB system funded ratios decreased by 0.7% when using uniform assumptions, and the median ADC as a percentage of governmental revenues increased by 0.1%.

The data reported using uniform assumptions is not audited by Treasury, so variability may exist in these numbers. Regardless, uniform assumptions provide a review of retirement reporting data that, in general, provides a more conservative outlook than the assumptions used by most local governments.

A likely reason why the impact of uniform assumptions tends to be greater in pension systems than in OPEB systems, is due to the greater asset base that exists with pension systems. Since Michigan law requires pension systems to be prefunded, assets are much greater statewide, and thus assumption changes tend to have a greater impact. Conversely, OPEB systems, while progress has been made over the last 3-years, are still nearly 46% less funded in aggregate, and 23% of OPEB systems have \$0 assets.

Fiscal Year 2022 Assumptions:

The uniform actuarial assumptions listed below can have a large impact on the total pension and retiree health care liabilities for systems throughout Michigan, and careful consideration was given to the selection of each uniform assumption. In summary, assumptions set too low or too conservatively may overstate retirement liabilities. Conversely, setting assumptions too high or too aggressively may understate retirement liabilities. The table provides assumptions for fiscal year 2022, along with a comparison to last year's fiscal year 2021 assumptions.

² [Fiscal Year 2019 Local Retirement System Status Report](#)

³ [Fiscal Year 2019 System Supplemental Reporting and Uniform Assumptions](#)

Assumption	Uniform Assumption	Change from Fiscal Year 2021
Investment Rate of Return	Maximum of 6.85%	Decreased the maximum investment rate of return from 7.00% to 6.85%
Discount Rate	<p>Blended discount rate calculated using GASB Statements No. 68 and 75 methodology</p> <p>For periods in which projected plan assets are sufficient to make projected benefit payments: Maximum of 6.85%</p> <p>For periods in which projected plan assets are not sufficient to make projected benefit payments: Maximum of 2.16%</p>	<p>Decreased the maximum rate from 7.00% to 6.85% for periods in which projected plan assets are sufficient to make projected benefit payments</p> <p>Decreased the blended rate from 2.2% to 2.16% for periods in which plan assets are not sufficient to make projected benefit payments</p>
Salary Increase	A minimum of 3.00% or based on an actuarial experience study conducted within the last five years	None
Mortality Table	A version of the Pub-2010 mortality tables with future mortality improvement projected generationally using Scale MP-2020 or based on an actuarial experience study conducted within the last five years	Generational mortality improvement updated to Scale MP-2020 from Scale MP-2019
Health care Inflation (for Medical and Drug) ⁴	<p>Non-Medicare: Initial rate of 7.25% decreasing .25% per year to a 4.50% long-term rate</p> <p>Medicare: Initial rate of 5.50% decreasing .25% per year to a 4.50% long-term rate</p>	<p>Non-Medicare: Initial rate reduced from 7.50% to 7.25% consistent with prior year assumption</p> <p>Medicare: Initial rate reduced from 5.75% to 5.50% consistent with prior year assumption</p>
Amortization of the Unfunded Actuarial Accrued liability	<p>Local governments must amortize the unfunded actuarial accrued liability (UAAL) over a maximum closed period of:</p> <ul style="list-style-type: none"> • Pension Systems: 17 Years • Retiree Health Care Systems: 27 Years <p>Closed plans must use a level-dollar amortization method</p> <p>Open plans may use a level-dollar or percent of pay amortization method</p>	<p>Pension: Closed period reduced from 18 years to 17 years</p> <p>Health Care: Closed period reduced from 28 years to 27 years</p>

⁴ Separate trend scales used to value other ancillary benefits can continue to be used as is.

Rationale for the Established Assumptions:

The following sections within this memo outline the uniform assumptions and the rationale for their selection. An independent actuary firm was hired to assist in updating the uniform assumptions. In addition, feedback was solicited from multiple stakeholders representing Michigan’s state retirement systems, local governments, employees and retirees, actuaries, and accounting professionals.

Investment Rate of Return:

The investment rate of return assumption reflects the long-term rate of return on retirement assets. Reduced from prior year’s uniform actuarial assumption publications, the fiscal year 2022 uniform assumption for the investment rate of return is set to a maximum of 6.85%. The 6.85% investment return was based on a 2.5% inflation assumption plus a 4.35% assumed real rate of return above inflation, net of any investment expenses. The real rate of return assumption was determined based on the 50th percentile of expected investment returns using the average asset allocation amongst most major pension systems⁵ and 2020 capital market assumptions⁶.

- The average target asset allocation as of 2020 was 45.4% public equity, 24.1% fixed income, 9.3% private equity, 8.0% real estate, 7.0% hedge funds, 3.4% commodities, 2.0% alternatives, and 0.8% cash.

For retirement systems that utilize an investment rate of return that is less than 6.85% for funding purposes, the local government should use the lower investment rate of return for the uniform assumption as well.

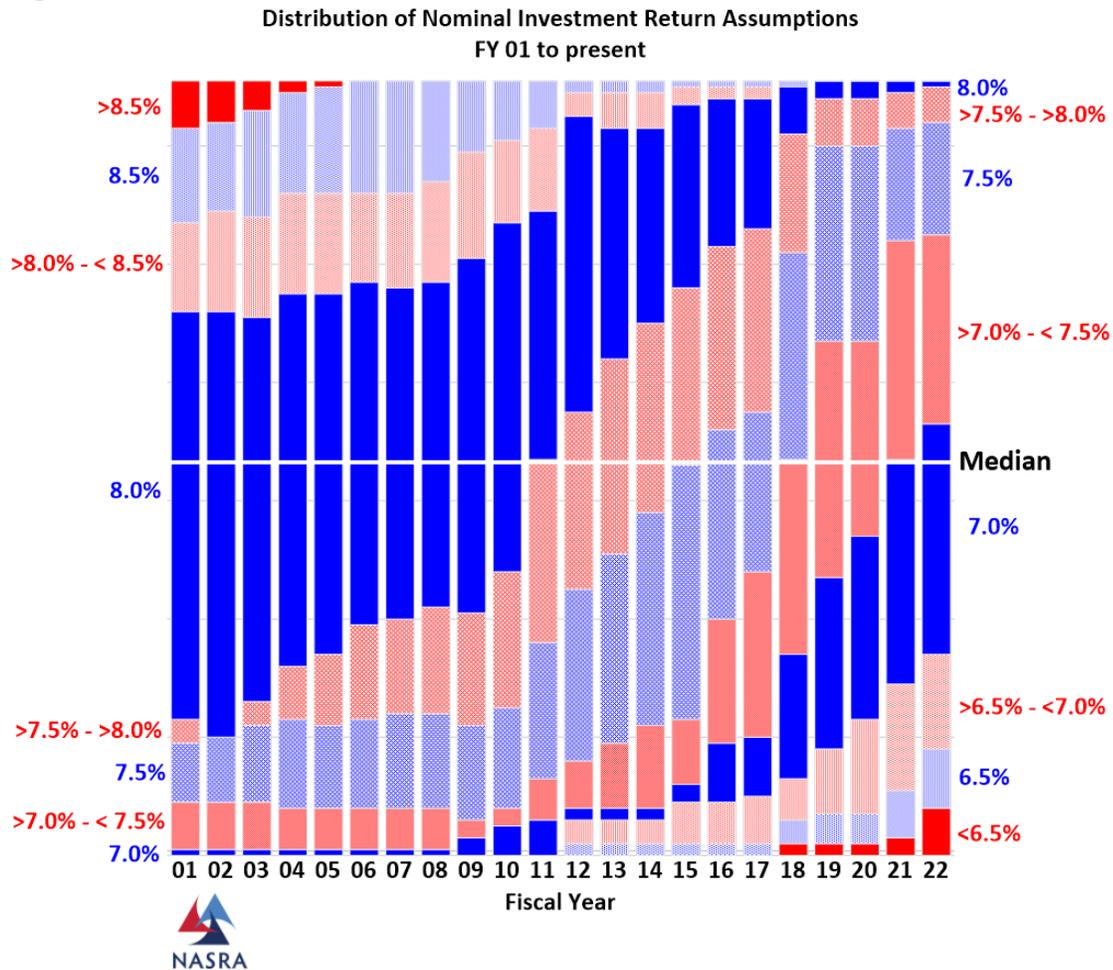
The continued period of low interest rates since 2009 has influenced an unprecedented reduction in public pension plan investment return assumptions. In its most recent annual public pension plan investment return assumption study⁷, the National Association of State Retirement Administrators (NASRA) found that among the 131 plans measured, nearly all have reduced their investment rate of return since fiscal year 2010, and more than half reduced it since fiscal year 2018. As a result, the median return assumption has declined to 7.00% in fiscal year 2021, the lowest rate in more than 40 years. Additionally, as demonstrated in Figure 1, the group of systems with investment rates of return below 7.00% have seen the greatest increases over the last 3-4 years. In fiscal year 2017, only 10% of reviewed systems had an assumed rate return below 7.00%, compared to 26% of reviewed systems using an assumed rate of return below 7.00% in fiscal year 2021.

⁵ Based on the Public Plans Database of approximately 209 public pension plans with target asset allocation information disclosed as of June 30, 2021 <http://publicplansdata.org/public-plans-database/>

⁶ Horizon’s 2020 Survey of Capital Market Assumptions
<https://www.google.com/search?q=horizon+actuarial+capital+market+survey>

⁷ <https://www.nasra.org/latestreturnassumptions>

Figure 1⁸



The State of Michigan’s retirement systems were also again reviewed to set this uniform assumption. While the trend over the last several years to reduce the assumed rate of investment return is also true for the state’s retirement systems, the rates established by the state last year remained consistent with the assumptions utilized in the prior year. The table below compares the state’s assumptions from their 2019 and 2020 valuations:

	2019 Valuation	2020 Valuation
Michigan Public School Employees’ Retirement System (Legacy)	6.80%	6.80%
Michigan Public School Employees’ Retirement System (Pension Plus)	6.80%	6.80%
Michigan Public School Employees’ Retirement System (Pension Plus II)	6.00%	6.00%
Michigan State Employees’ Retirement System	6.70%	6.70%
Michigan State Police Retirement System (Legacy)	6.80%	6.80%

⁸ <https://www.nasra.org//Files/Website%20Images/historicreturnassumptionswtitle.png>

Michigan State Police Retirement System (Pension Plus)	6.85%	6.85%
Michigan Judges Retirement System	6.25%	6.25%

The Municipal Employees' Retirement System of Michigan (MERS), which administers most local government pension plans in the state, also recently reduced its assumed investment rate of return from 8.00% in 2014 to 7.75% in the system's 2015 valuation, and to 7.35% within the system's 2019 valuation.

Ultimately, the decision to reduce the assumed rate of investment return to 6.85% was based on three factors: 1) the trend nationally for public pension systems to decrease assumed investment rates of return, particularly the trend to reduce rates to below 7.00%; 2) the use of assumed rates of return of less than 7.00% for all major State of Michigan retirement systems; and 3) the continued philosophy of uniform assumptions being a more conservative set of assumptions, and thus providing a valuable perspective to local governments. Based on these three factors, a maximum rate of 6.85% will be used for fiscal year 2022. This important assumption will be reviewed annually. This assumption will continue to be reviewed in future years, with further adjustments made depending on actual and expected market returns.

Discount Rate:

The discount rate is the single rate of return that results in the present value of all projected pension and retiree health benefit payments. The approach to calculating the discount rate should be consistent with GASB Statements No. 68 and 75 as follows: 1) to the extent the plan's fiduciary net position is projected to be sufficient to make all projected benefit payments, a local government may use a maximum discount rate of 6.85%, consistent with the assumed investment rate of return; and 2) to the extent the plan's fiduciary net position is not sufficient to make projected benefit payments, a discount rate of 2.16% shall be used.

- Additionally, in order to apply the maximum discount rate of 6.85%, the following must apply: 1) establishment of a qualified trust; 2) adoption of a formal funding policy; and 3) source of financing consistent with GASB standards with no projected depletion date.

The 2.16% lower rate is reflective of the index rate for 20-year, tax exempt general obligation municipal bonds with an average rating of AA/Aa or higher as of June 24, 2021.

Historically, Michigan law requires local governments to prefund their pension system, so it is not anticipated that the blended discount rate will be necessary for many pension systems. However, many retiree health care plans are significantly underfunded or unfunded, and the use of a blended discount rate could be more prevalent.

Salary Increase Rate:

The salary increase rate assumption is the rate that salaries will increase over time. The higher the assumed salary increase assumption, the higher the projected pension benefit obligation. The uniform assumption for the salary increase rate is set at a minimum of 3.00%. However, if the local government has conducted an actuarial experience study within the last five years,

and the experience study recommended a different rate be used, the local government may utilize this salary increase rate in lieu of the 3.00% minimum requirement.

The 3.00% salary increase assumption is based on a 2.00% inflation assumption plus a 1.00% real wage increase above inflation. The Consensus Revenue Agreement Executive Summary dated May 21, 2021⁹ indicates that Detroit's CPI increased 1.0% in calendar year 2020 and is forecasted to increase 2.6% in calendar year 2021. The national CPI is slightly higher with an actual increase of 1.2% in calendar year 2020 and a forecasted increase of 2.9% in calendar year 2021. Based on historical CPI and indicators of future expectations,¹⁰ 2.00% is a reasonable long-term inflation assumption. Furthermore, the 2020 Old-Age Survivors and Disability Insurance Program (Social Security) Trustees' Report for intermediate cost assumptions for real wage increases is 1.14% per year. The Consensus Revenue Agreement, Executive Summary dated May 21, 2021 includes similar real wage increases for the US and somewhat higher increases for Detroit.

In setting this uniform assumption, we also reviewed the salary increase assumption utilized by the Michigan Public School Employees' Retirement System (MPERS), the Michigan State Employees' Retirement System (SERS), and MERS. In reviewing 2020 valuation data, assumptions for MPERS, and SERS have remained consistent from the previous year. MPERS and SERS are both utilizing a 2.75% salary increase assumption. MERS continues to utilize a 3.00% salary increase assumption, having reduced this assumption from 3.75% to 3.00% beginning with the system's 2019 valuation based on their most recent experience study.

Primarily, the decision to maintain the previous year's minimum salary increase rate was based on two factors: 1.) the continued trend of low inflation rates; and 2) the experience of Michigan's other major systems in maintaining their salary increase assumptions (MPERS, SERS, and MERS).

Mortality Table and Generational Improvement

The mortality assumption table provides the underlying projections for expected death rates used by actuaries. This assumption reflects the length of time system members will spend drawing a pension or retiree health benefit in retirement. The fiscal year 2022 uniform assumption for mortality is a version of the Pub-2010 mortality tables released by the Society of Actuaries (SOA) in January 2019 and created based upon mortality experience among public pension systems across the United States. The Pub-2010 mortality tables are the first tables created using exclusively public sector experience and are therefore the most appropriate mortality tables to be used by public sector pension and retiree health care plans. There are two variations of the Pub-2010 tables pertaining to local government job classifications: 1) PubS-2010 for public safety personnel; and 2) PubG-2010 for general employees.

➤ Generational Mortality Improvement

⁹ https://www.house.mi.gov/hfa/PDF/RevenueForecast/CREC_Executive_Summary_May2021.pdf

¹⁰ Horizon's 2021 Survey of Capital Market Assumptions, 2020 OASDI Trustees Report's Intermediate Cost Assumptions, and the spread between yields on 30-year US Treasury bonds with and without inflation indexing.

The SOA has released updated mortality improvement scales each October since 2014 with the most recent improvement scale, MP-2020, released in October 2020. In addition to a version of the Pub-2010 mortality tables, the fiscal year 2022 uniform assumption requires the use of future mortality improvement projected generationally using the Scale MP-2020.

Consistent with last year’s guidance, if the local government has conducted an actuarial experience study within the last five years, and the experience study recommended a different mortality table and/or improvement scale be used, the local government may utilize the experience study recommendations in lieu of the Pub-2010 mortality tables or Scale MP-2020.

This uniform assumption will be reviewed annually and set to the most recent mortality tables and improvement scales issued by the SOA moving forward.

Health Care Inflation:

The health care inflation assumption is used to project expected growth rates in medical premiums and expenditures. The uniform assumption for health care inflation varies based on if the plan utilizes Medicare. The table below provides the uniform assumption for Medicare retiree benefits and another set for Non-Medicare retiree benefits.

Medicare/Non-Medicare	Initial Trend Rate	Annual Decrease to Long-Term Trend	Long-Term Trend
Non-Medicare – Medical and Drug	7.25 %	.25% annually	4.50%
Medicare – Medical and Drug	5.50%	.25% annually	4.50%

This uniform assumption is based on a survey of over 100 health insurers, managed care organizations, pharmacy benefit managers, and third-party administrators about forecasted health plan cost trends. Respondents included the five largest health insurance payers in the U.S., the five largest pharmacy benefits managers in the U.S., and the largest health insurance plan in the State of Michigan.¹¹

Initial Trend Rate:

The health care trend survey showed a 7.20% trend for commercial non-Medicare retiree PPO plans. For active and non-Medicare prescription drugs, the survey shows a 7.30% trend, prior to the impact of prescription drug rebates. Non-Medicare claim split is typically similar to active plans, where a 70%/30% medical and prescription drug split might be typical. Using this assumed 70%/30% split yields a weighted initial trend of 7.23%, which we rounded to 7.25%.

The survey’s average Medicare supplement trend over the last three years is 3.63%. A three-year average was used, due to the significant variation in Medicare prescription drug trend over the period. The medical and prescription drug claim split depends heavily on how a plan coordinates with Medicare. Under a Medicare Supplement, a typical split might be 35%/65%

¹¹ Health care trend survey published by Segal Consulting in Fall 2020

between medical and prescription drugs. Using this assumed 35%/65% split yields a weighted initial trend of 5.56% which we rounded to 5.50%.

Annual Decrease and the Long-Term Trend Rate:

Historically, medical cost increases have significantly outpaced the rate of inflation. It is generally accepted that it is unlikely that these increases will continue over the long-term to exceed the overall growth rate of the economy. This is because an unlimited growth in medical care expenses would eventually equal 100% of the Gross Domestic Product (GDP). As such, indicators for health care include a slow reduction in the annual health care inflation rate to a point in which the rise in health care cost is stabilized and sustainable for the long-term. The Congressional Budget Office, Centers for Medicare & Medicaid Services, Office of the Actuary, and the Social Security Income Trustees reports use inflation, real per-capita GDP, and “excess” (new technology, etc.) to determine long-term medical cost increases. Based on these reports, 4.50% remains within the range of ultimate rates over the projection period, consistent with prior year’s Uniform Actuarial Assumption publications. Long-term projections are usually at least 10 years for the trend to reach the long-term rate, so the annual decrease was set as .25% annually. At .25%, it would take 11 years to get from an initial trend of 7.25% to a long-term trend of 4.50% and 4 years to get from an initial trend of 5.50% to a long-term trend of 4.50%.

Other Considerations:

Setting the uniform assumption for health care inflation is more challenging than setting the other uniform assumptions. Setting appropriate trend rates for a given plan depend on multiple factors, including the non-Medicare plan type offered (PPO, HMO, HDHP, etc.), Medicare plan type and/or coordination method, and consideration that some plans may exclude medical or prescription drugs entirely. We acknowledge that setting this uniform assumption will result in certain plans having a materially mismatched funding assumption with the uniform assumption, particularly for the initial trend rate.

We also reviewed the most recent health care inflation assumptions for the MPSERS and Michigan SERS. MPSERS pre-65 utilizes a 7.75% initial trend rate; .283 annual decrease; to a 3.50% long-term rate. Michigan SERS pre-65 utilizes a 7.50% initial rate; .267 annual decrease; to a 3.50% long term rate. MPSERS post-65 utilizes a 5.25% initial trend rate; .116 annual decrease; to a 3.50% long-term rate. Michigan SERS post-65 utilizes a 6.25% initial rate; .183 annual decrease; to a 3.50% long term rate.

Amortization of the Unfunded Actuarial Accrued Liability:

The calculation of the ADC includes the normal cost payment and the annual amortization payment for past service cost to fund the unfunded actuarial accrued liability (UAAL). There are many alternatives available to local governments when setting the amortization schedule in calculating the ADC. The amortization schedule determines how much of the UAAL the actuary will recommend be paid in the upcoming year.

For fiscal year 2019, the published uniform assumptions were listed as 20 years for pension systems and 30 years for health care systems, with the caveat that each year moving forward,

the annual establishment of the uniform assumption base year will be reduced by one year (i.e. 20 to 19 for pension and 30 to 29 for retiree health care). This methodology recognizes that all local governments should be increasing funding to ensure that plans are 100 percent funded within the time period prescribed or sooner.

The uniform assumption for fiscal year 2022 is to calculate the ADC as normal cost plus a portion of the UAAL calculated on a closed amortization schedule not to exceed 17 years for pension and not to exceed 27 years for retiree health care. For plans that are utilizing an amortization period that is shorter for funding purposes, the local government should use the shorter timeframe for the uniform assumption as well. For plans that are closed to new entrants, the UAAL must be amortized using a level-dollar amortization method. For plans that are still open to new entrants, a level-dollar or percent of pay amortization method may be utilized.

The Government Finance Officers Association recommends that the ideal amortization period should fall between the 15-20 year range.¹⁴ The decision to extend health care to 27 years is based on recent data showing many local governments got a late start on prefunding retirement health care. Each year moving forward, the annual establishment of the uniform assumption base year will be reduced by one year (i.e. 17 to 16 for pension and 27 to 26 for retiree health care).

Fiscal Year 2022 Implementation:

The Form 5572 for fiscal year 2022 will again collect pension and retiree health care system assets, liabilities, funded ratio, and ADC (ADC/ARC¹⁰) when using the uniform assumptions. Again, this reporting will be in addition to the assets, liabilities, funded ratio, and ADC found in the audited financial statements, which are used in the determination of underfunded status.

All local governments must utilize the fiscal year 2022 uniform assumptions outlined in this memo within the Form 5572. Each year moving forward, it is expected the annual uniform assumptions will be updated and utilized within the respective Form 5572 for that fiscal year (e.g. the fiscal year 2023 uniform assumptions will be utilized within the fiscal year 2023 Form 5572). Local governments should consult with their actuarial professional to obtain the required reporting data utilizing fiscal year 2022 uniform assumptions. Consistent with Governmental Accounting Standards Board (GASB) statements No. 68 and 75, actuarial valuations are to be performed at least every two years, with more frequent valuations encouraged. Local governments may utilize roll-forward procedures in non-valuation years utilizing any updates to the uniform assumptions to calculate the data. The Act requires local governments to annually report their Form 5572 no later than six months after the end of the local government's fiscal year.

¹⁴ <http://www.gfoa.org/core-elements-funding-policy>

¹⁰ See Numbered Letter 2018-3 for additional detail on Annual Required Contributions (ARC) and Actuarially Determined Contributions (ADC)

Local governments who utilize the alternative measurement method allowed by the GASB may continue to do so; however, these local governments must adjust the calculation of their retirement assets, liabilities, funded ratio, and ADC using Treasury's uniform assumptions as necessary.