



North Carolina Committee on Actuarial
Valuation of Retired Employees' Health Benefits

Review of Assumptions for December 31, 2020 OPEB Valuation

May 26, 2021 / Daniel J. Rhodes, FSA, MAAA and Kenneth C. Vieira, FSA, FCA, MAAA

OPEB Actuarial Valuation Assumptions for the December 31, 2020 Valuation

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Valuation Purpose

GASB Statements 74 and 75

- Measure State obligations to provide other postemployment benefits (OPEB)
- Provide information for the Plan Audit (GASB 74)
- Determine the Actuarially Determined Contribution (ADEC)
- Annual OPEB Expense for fiscal 2022, and fiscal 2022 disclosure information (GASB 75)
- Provide exhibits useful for preparing required financial statement recognition and disclosure items

Dates for this valuation

- Valuation Date is December 31, 2020
- Measurement Date is June 30, 2021
- GASB 74 Reporting Date is June 30, 2021
- GASB 75 Reporting Date is June 30, 2022

Deliverables for this valuation

- 2021 GASB 74 report (late August)
- 2022 GASB 75 report, with allocations (late February)
- Auditor requests (as needed)

Accounting and Funding Methodology

GASB 75 Budgeting Methods for Expense

- Mandated by GASB 75
- Actuarial cost method — Entry Age Level Percent of Pay
- Asset valuation method — market value
- Recognition of Changes in Net OPEB Liability
 - Plan changes are recognized immediately
 - Asset gains and losses are recognized over 5 years
 - Other changes are over 6 years (Total Future Service/All Participants)

Funding Assumptions and Methods for the Actuarially Determined Contribution (ADEC)

- Current funding policy is essentially a pay-as-you-go process
 - Occasional ad hoc payments, such as \$475 million transfer in FY 2020
- The ADEC is not required, but is a measure of how large the contribution would be if the Plan were to be pre-funded
- The State can periodically reset the method for calculating the ADEC
- Demographic assumptions are generally the same as for GASB, but the ADEC can be based on a different cost method and the discount rate can differ
- Decisions about the ADEC are after the assumptions section

Assumptions/Methods set by the State Periodically

- Relationship between Valuation Date, Measurement Date and Reporting Date
- Demographic and Certain Economic Assumptions
 - Should be consistent with the pension plan valuations
 - Update in OPEB valuation when changes are adopted for pension valuations
 - Typically reset every five years in a study by the pension actuary, and approved by the State for use
 - Pension actuary presented results of new experience study in December 2020
 - Results to be used in December 31, 2020 pension valuations
 - Various changes to demographic and economic assumptions (described on following slides)
- Determination of Basis for Allocation of Costs to Agencies
- Funding Policy for the Actuarially Determined Contribution
 - Actuarial Cost Method
 - Discount Rate (Long-term Rate of Return or Discount Rate for GASB 75)
 - Amortization Period (Years, Level \$ or Percent of Pay, and Open/Closed)

If the State were to consider prefunding OPEB liabilities, we would have further discussion on methods and assumptions for funding calculations.

Pension Economic Assumptions set by the State Periodically

	Descriptor	December 31, 2019 Assumption	December 31, 2020 Assumption	Comments
Inflation	A building block component for several items	3.00%	2.50%	Experience study recommends 50 basis point decrease based on projected lower increases in CPI
Long-Term Rate of Return on Plan Assets	Investment return Used for OPEB Expense	7.00%	6.50%	Experience study recommends 50 basis point decrease based on reduction in assumed inflation
Assumed Payroll Growth	General wage increases Used for the ADEC	3.50%	3.25%	Experience study recommends 25 basis point decrease based on higher real wage growth somewhat offsetting reduction in inflation
Salary Growth	The salary growth by individual, equal to merit increases plus general wage growth Used for actuarial cost method (Entry Age Normal Level Percentage of Pay)	Teachers: 7.55% grading down to 3.50% Other Education: 7.55% grading down to 3.50% Law Enforcement: 8.10% grading down to 3.50% General Employees: 5.50% grading down to 3.50%	Teachers: 7.30% grading down to 3.25% Other Education: 7.50% grading down to 3.25% Law Enforcement: 8.05% grading down to 3.25% General Employees: 6.25% grading down to 3.25%	Experience study recommends updates based on recent experience Ultimate salary increases lowered to match payroll growth assumption

Pension Demographic Assumptions set by the State Periodically

	Descriptor	December 31, 2019 Assumption	December 31, 2020 Assumption	Comments
Pre-retirement mortality	Probability of death while active	Differing mortality for Teachers/Other Education and General/Law Enforcement Based on RP-2014 tables with various adjustments	Use Pub-2010 tables, based on public plan experience, with adjustments Separate tables for Law Enforcement and General (including Teachers)	New tables are better fit, requiring less adjustment
Post-retirement mortality	Probability of post-employment death	Differing mortality for Law Enforcement, Teachers, Other Education, and General Employees by EE/Spouse and Gender Based on RP-2014 tables with various adjustments	Use Pub-2010 tables, based on public plan experience, with adjustments Separate tables for Law Enforcement, Teachers, and General Separate tables for contingent annuitants	New tables are better fit, requiring less adjustment
Mortality improvement	Scale applied to tables to reflect future mortality improvement	MP-2015 scale	MP-2019 scale	Most recent scale, reflects increase in mortality relative to prior assumption

Pension Demographic Assumptions set by the State Periodically

	Descriptor	December 31, 2019 Assumption	December 31, 2020 Assumption	Comments
Turnover	Probability of terminating service prior to retirement eligibility each year prior to retirement eligibility	Based on age, service, gender, and employment classification	New tables developed based on recent experience	New tables generally expect more turnover than prior assumption
Disability	Probability of becoming disabled prior to retirement eligibility each year prior to retirement eligibility	Based on age, service, gender, and employment classification	New tables developed based on recent experience	
Retirement	Probability of retiring each year after meeting the age and service eligibility requirements	Based on age, service, gender, and employment classification	New tables developed based on recent experience	New tables generally expect fewer retirements than prior assumption
Spouse age difference	Actual data is used for retirees, but active employees are valued based on assumption at retirement	Husbands are assumed to be four years older than their wives	Husbands are assumed to be three years older than their wives	

Assumptions set by the Health Actuary Annually

	Descriptor	December 31, 2019 Assumption	December 31, 2020 Assumption	Comments
Substantive Plan	Plan documents, SPDs, Notices, Ordinances, Past Practices and Public Law that describe the benefits due and that are expected to be due to participants	Detailed in the valuation report	Same process as last year	Reviewed by the State Also includes current retiree contributions (2021 rates)
Plan Changes	Change in plan terms must be recognized immediately in OPEB expense under GASB 75	Plan changes as of January 1, 2021 were known at the time of the valuation, and were reflected in last year's results	Plan changes as of January 1, 2022 known at this time (no material impact expected on claims costs)	
Claims Cost Rates	Derivation of the average expected rates for each coverage	Separate rates for Non-Medicare (70/30, 80/20) and Medicare (70/30, MA Base, MA Enhanced)	Being developed	
Medicare Advantage	Fully insured rates guaranteed for five years effective January 1, 2021	Incorporate rate guarantee, and projected premiums in 2026 and beyond	No change	

Assumptions set by the Health Actuary Annually

	Descriptor	December 31, 2019 Assumption	December 31, 2020 Assumption	Comments
Short Term Health Trend	The expected increases in health care costs	Separate trends for Medical, Rx, MA Plans, Retiree Contributions and Admin	Being developed	Short-term trends will be consistent with Q1 financial projections (in process)
Participation Rate	The assumed percentage of active employees that retire and elect to be covered under the Plan	100% for employees, 10% for spouses	No change	
Migration Assumption	The assumed movement of participants between plans	See next slide	See next slide	
Tobacco Attestation	Different retiree contributions apply for those in 80/20 Plan based on completing attestation of tobacco use	98.5% of participants in 80/20 Plan assumed to complete attestation	Will be updated consistent with Q1 financial model.	
Administrative Expense Rates	Separate from the expenses included in the premiums, applies to self-funded plans	Per participant expenses (retiree and spouses) calculated	Being developed	Reflects TPA fees effective January 1, 2022

Assumptions set by the Health Actuary Annually

Migration Assumption

2019 Valuation

	2020	2021	2022	2023+
Non-Medicare Retiree				
70/30 Plan	53.2%	52.1%	51.1%	50.0%
80/20 Plan	46.8%	47.9%	48.9%	50.0%
Medicare Retiree				
70/30 Plan	15.6%	14.4%	13.2%	12.0%
MA Base	73.2%	74.5%	75.7%	77.0%
MA Enhanced	11.2%	11.1%	11.1%	11.0%

2020 Valuation

- Migration based on assumptions used for financial projections
- Q1 2021 Financial update still in progress
- Q4 2020 Financials showed increase in Non-Medicare 70/30 plan participation and decrease in Medicare Advantage plan participation, based on open enrollment

Assumptions set by the Health Actuary Periodically

	Descriptor	December 31, 2019 Assumption	December 31, 2020 Assumption	Comments
Ultimate Health Trend	<p>The final entry in the Health Trend that is projected for 80+ years</p> <p>This is the expectation for US medical spending in general. Components:</p> <ul style="list-style-type: none"> • Inflation • Historic measures (excess of health care increases over CPI) • Limiting factor that medical expenses will flatten out as a percentage of GDP 	5.00%	No change	
Medicare Eligibility	Some hires prior to 1988 were not required to be covered under Medicare, resulting in larger over age 65 claims	100% eligible	No change	
Morbidity	A required process of allocating average claims to each age and gender	Segal Standard Table	No change	

GASB 74/75 Assumptions/Methods for Accounting

	Descriptor	December 31, 2019 Assumption	December 31, 2020 Assumption	Comments
Actuarial Cost Method	Basis for assigning costs accruals to active employees	Entry Age Normal Level Percentage of Pay	No Change	No choice, prescribed by GASB 74/75
Discount Rate	The rate used to discount future projected benefit payments to the valuation date 20-year, general obligation, municipal bond index rate as of the Measurement Date, unless pre-funding, in which case that same rate is blended with the long-term rate of return	3.50% as of June 30, 2019 and 2.21% as of June 30, 2020	2.21% as of June 30, 2020, and market rate as of June 30, 2021 (as required by GASB)	No choice (for unfunded plans), prescribed by GASB 74/75 This assumption has significant impact on the liability calculation - as the rates move downward, the liability will increase See next slide
Expense Methodology	The development of the OPEB Cost from the benefit liabilities and assets	GASB 75 Basis	No Change	No choice, prescribed by GASB 75
Allocation of Expense to Contributing Employers (Agencies)	The basis the OPEB expense is allocated to contributing divisions.	Based on the Present Value of Future Salaries	No Change	Consistent with the pension plans methodology. The Cost Method is a level percent of salary cost method, which led to this basis.

Discount Rate

- As noted on prior slide, GASB mandates use of a municipal bond index rate for calculating the Net OPEB Liability of an unfunded (“pay-as-you-go”) plan
- Traditionally, the State’s OPEB plan has been essentially pay-as-you-go
 - General Assembly sets appropriation for each year to be slightly higher than expected expenses
 - RHBTF maintained reserve balance of approximately 1.0 to 1.5 years of expenses
- At end of FY 2020, \$475.2 million was transferred from Public Employees Health Benefits Fund to RHBTF
 - As a result, assets at June 30, 2020, were almost 2.0 years of 2020 benefit payments
 - No future transfers are assumed to occur
- If additional funding begins to happen regularly, at some point we should consider a “blended” discount rate
 - “Blend” is between the bond index rate and the long-term expected rate of return on plan assets
 - Perform “depletion analysis” to determine crossover point when bond rate begins to apply
- When would we consider a blended rate?
 - Are contribution amounts established by statute?
 - Is there a formal, written policy describing how contributions are made?
 - Should consider five-year contribution history as key indicator of future contributions and reflect other known events
 - If contributions are not established by statute and there is no formal policy, generally you can use some form of average of contributions over last five years

Assumptions/Methods for Funding

Generally, the Actuarially Determined Contribution is the annual accrual (Normal Cost), plus a recognition of the unfunded liability, plus an adjustment for timing.

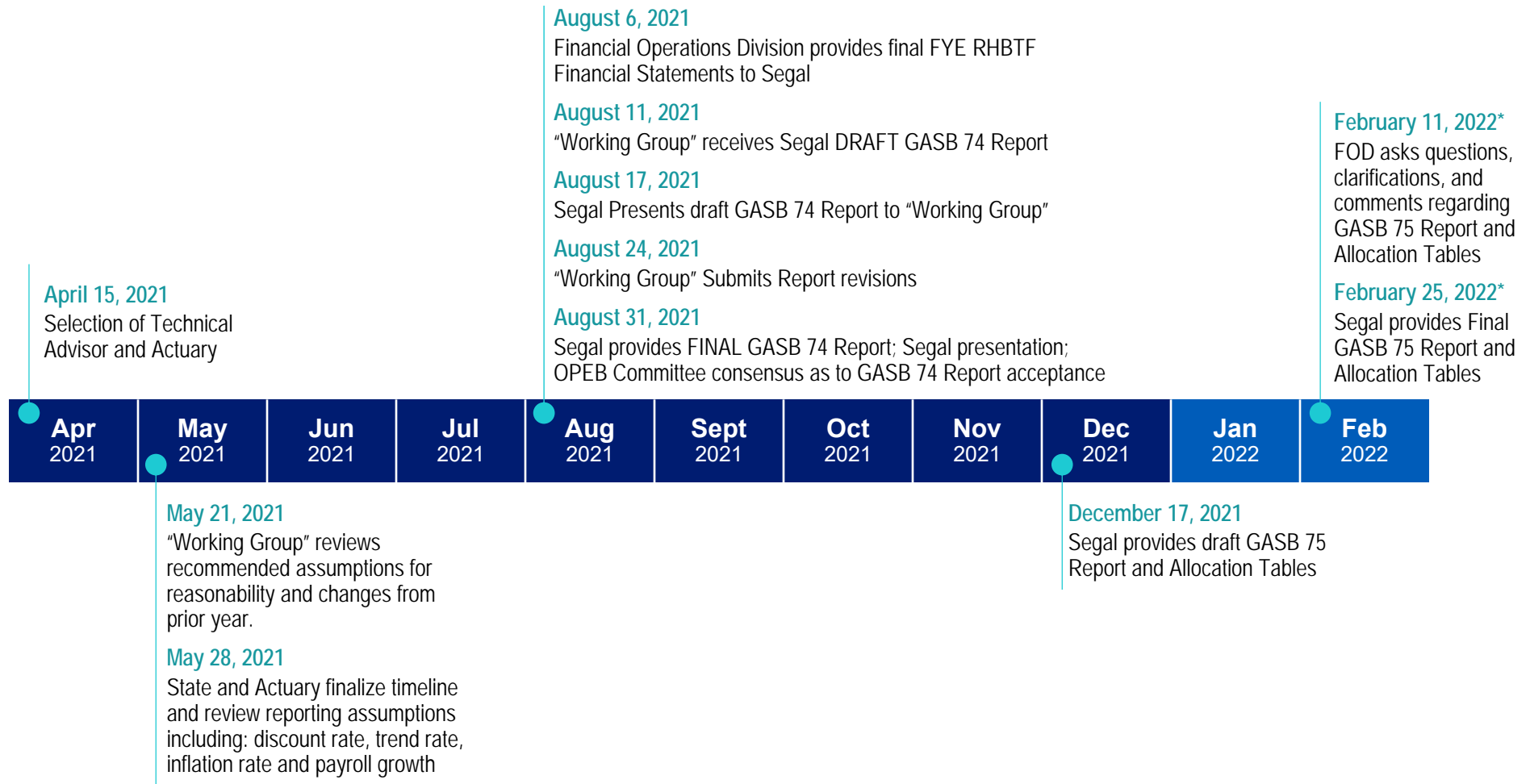
	Descriptor	December 31, 2019 Assumption	December 31, 2020 Assumption	Comments
Actuarial Cost Method	Basis for assigning costs accruals to active employees	Entry Age Level Percent of Payroll	Entry Age Level Percent of Payroll	Could consider other cost methods if plan were actually prefunded
Discount Rate	The rate used to discount future projected benefit payments to the valuation date	GASB 74/75 discount rate as of fiscal year end	GASB 74/75 discount rate as of fiscal year end	Could consider using long-term return assumption if plan were actually prefunded
Amortization Methodology	Method for recognizing the unfunded liability	30-year, open, level percent of pay	30-year, open, level percent of pay	Could consider a closed funding period if plan were actually prefunded
Projecting to Future Years	ADEC is not calculated on a projected basis since there is no funding policy in place	Calculated the ADEC for fiscal 2020	Calculated the ADEC for fiscal 2021	

Other Items and Committee Concerns

- Questions or concerns from previous valuations of which Segal should be aware
- Other State changes or directions that need to be reflected in this valuation



Proposed 2021 Process and High Level Timeline



* FOD is simultaneously verifying the GASB 75 Report and Allocation Tables as well as other Reports (i.e., DIPNC, CDBP, etc) for the CAFR from December to February. It could be possible that FOD provides feedback to the actuary prior to 2/15/2022 where FOD would expect a final GASB Report and Allocation Tables within 2 weeks of the final comments.

Thank You

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