

ASC 715 and OPEB Valuation



ACOPA

ASPPA® College of Pension Actuaries

Part of the American Retirement Association

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Overview

- The Financial Accounting Standard Board (FASB) issued Accounting Standards Codification No. 715 related to the financial accounting and reporting for an employer that offers pension, other post-employment benefits, and certain special or contracted termination benefits
 - Prior to the Codification, the requirements were known as:
 - FASB 87 – Pension
 - FASB 106 – Retiree Life and Medical
 - FASB 88 – Special/contracted termination benefits
- Other Post–Employment Benefits (OPEB) include medical, dental, vision, prescription, disability, and life insurance benefits provided to eligible retirees; does **not** include pension or early retirement incentives
 - This presentation covers topics related to OPEB only
 - This presentation does **not** cover governmental plan valuation and accounting (GASB)

ASC 715 OPEB Accounting

- Accounting and reporting for OPEB expenses and obligations
 - FASB considers OPEB part of an employees current compensation being recognized as benefits are earned over total working service
- Requires accrual accounting of the future benefit costs as a part of providing services today
 - Creates greater transparency in financial reporting
 - Promotes intergenerational equity because the full cost of benefits are accrued prior to the commencement date
 - Annual expense is shown in the income statement
 - Disclose OPEB liabilities on the balance sheet as they accrue

ASC 715 OPEB Accounting (*continued*)

- ASC 715 *does not* require pre-funding OPEB obligations, just the reporting of them.
 - The pre-funding of OPEBs through an irrevocable trust is not prevalent because
 - Implies permanence
 - Assets may not be diverted for other uses until OPEB obligations have been satisfied
 - Tax benefit received not as valuable as pension funding (based on current costs only)
- Actuarial Valuations are required and there are consequences for non-compliance
 - Adverse opinion by Board of Directors auditor
 - Impact on bond rating
 - Difficulty in raising capital

Actuarial Valuation Process

OPEB

- Identify OPEB plans and criteria for receiving benefits
 - Benefits promised and eligibility conditions
- Demographic information – current retirees, future retirees, spouses and/or dependents as applicable
- Select appropriate actuarial and economic assumptions (*see Assumptions section*)

Actuarial Valuation Process *(continued)*

OPEB

- Project future expected benefit payments (or cash flows)
 - Pay-as-you-go costs = Net employer benefit payments
 - Net Costs = Total payments - Retiree Contributions
 - Must reflect age-adjusted premiums approximating the true cost of coverage (*Aging and implicit rate subsidy discussed later*)
- Discount expected payments to yield actuarial present value of future benefits
- Allocate present values to the appropriate time period of employment
- Develop annual expense and financial statement items

Actuarial Valuation Process

ASOP No. 6

- “Measuring Retiree Group Benefits Obligations and Determining Retiree Group Benefits Program Periodic Costs or Actuarially Determined Contributions”
- Provides guidance around all aspects of an OPEB actuarial valuation
 - Measure obligations
 - Assign obligations to time periods
 - Guidance on OPEB-specific assumptions
 - Guidance of cost allocation procedures
 - Coordinating and integrating all of the elements of the actuarial valuation

Key OPEB Obligation Measures

Definitions

Present Value of Future Benefits (pvFB) – past and future service

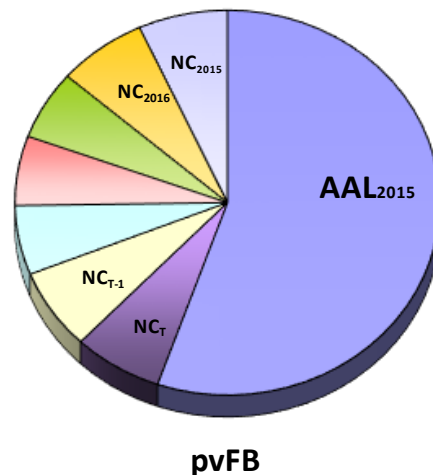
- Total projected costs to finance all future benefits based upon members' past *and* future service

Actuarial Accrued Liability (AAL) – past service

- Portion of the pvFB earned (or accrued) based on members' service as of valuation date

Normal Cost (NC) – current service

- Portion of the pvFB attributable to services rendered during the year and increased eligibility



Actuarial Cost Method

- Used for allocating the actuarial present value of future benefits to time periods
- Allocation of the Present Value of Future Benefits (pvFB)
 - Attributes benefits from hire date to full eligibility date
 - Actuarial Accrued Liability is the portion of the pvFB not covered by future normal costs
 - Normal Cost (or “Service Cost”) is the portion allocated to the valuation year
- Projected Unit Credit cost method is required (as for pension accounting)

OPEB Expense Measure

Summary

Annual Expense

Net Periodic Postretirement Benefit Cost (NPPBC)

- The accrual cost of the plan sponsor's participation in an OPEB plan for financial reporting purposes
- Includes the value of benefits earned during year, the time value of money, and amortization of amounts not yet recognized in the balance sheet
- No requirement to fund, however represents the amount needed to eliminate or minimize the balance sheet liability

OPEB Expense Measure Components

NPPBC

- Service Cost – portion of pvFB attributable to a member's service for the period
- Interest Cost – increase in AAL due to passage of time
- Expected Return on Assets, if funded
- Amortization of:
 - Net Transition (Asset)/Obligation
 - Prior Service Cost
 - Net (Gain)/Loss
- Special events (i.e., settlement or curtailment)

Assumptions

Introduction

Actuarial Assumptions

The Basics

- Assumptions should be independently reasonable and consistent on an aggregate basis
- Assumptions are used to model future events, resulting in a series of cash flows and present values as of a particular date
 - Assumptions vary based on the purpose of measurement
- Some assumptions (or assumption setting methods) are deemed acceptable by regulation or accounting standard
- Some assumptions (or assumption setting methods) are selected by the sponsor
 - Each actuarial assumption should be management's best guess solely with respect to that individual assumption

Actuarial Assumptions

Framework for Assumption Setting

- Plan sponsors have the responsibility for selecting assumptions that affect the organization's financial results
- Actuaries should provide plan sponsors with information to make decisions on the appropriate economic and demographic assumptions
 - The goal is to construct a set of assumptions that will project the most likely picture, in the actuary's judgment, of the plan's operation over the long term
 - Under the best estimate perspective, the actuary relies on analysis of data and other available information including future trends
 - Must periodically review the assumptions to ensure they remain "best estimates"
 - Necessary to fulfill role of specialist (SAS 73) to be relied upon for assumption choice

Actuarial Assumptions

Framework for Assumption Setting (*continued*)

- Assumption-setting process based on historical experience and future expectations
 - Reflect knowledge of the plan and its participants as of a specific point in time
 - Necessary to adjust assumptions periodically to reflect changing circumstances and additional plan specific experience

Assumption Descriptions and Applicability

Assumptions

- This section has descriptions of the primary assumptions used in OPEB actuarial valuations
 - Many are also used for pension valuations
 - However, some assumptions can have a much greater impact on OPEB obligations
 - Some assumptions are OPEB specific
- A test case is provided to demonstrate the application of the principle assumptions
 - Some simplifications have been made for illustrative purposes, which result in figures different from a standard valuation

Summary of Plan Provisions

Sample OPEB Plan

Provisions	
Eligibility	Retiree age 55 and above Ten years of service
Benefits	Pre-65: Medical and prescription drug coverage subsidy for retiree and dependents Post-65: Benefits integrate with Medicare Dental and vision subsidy for retiree only
Cost Sharing	The company subsidizes 80 percent of benefit costs for retiree and spouse

Test Case Detail

- Participant is currently age 50
- Participant currently has five years of service
- Benefit eligibility is age 55 with ten years of service
- The company subsidizes 80 percent of benefit costs for retiree/spouse
- Participant has not elected spousal coverage
- The pre-65 premium is \$12,500 and post-65 premium is \$6,250 (company subsidy = \$10,000/\$5,000)

Claim Costs

The Basics

- Per capita healthcare costs are developed for modeling future obligations
 - Historical experience is typically used as an assumption for future claim experience
- Often, the retiree experience alone is **not** credible
 - Active and retiree experience can be combined to develop claim rate
 - Blend with national average retiree costs or premiums
- The actuary may rely on premiums as basis for initial claim costs
 - Plan sponsors typically pay healthcare premiums to an insurance or managed care company on the retiree's behalf
 - Premiums typically based on plan specific claim experience of the healthcare program
- Premiums typically coordinate with social programs
 - Healthcare premiums decrease at age 65 due to Medicare integration
 - Consider how OPEB supplements Medicare

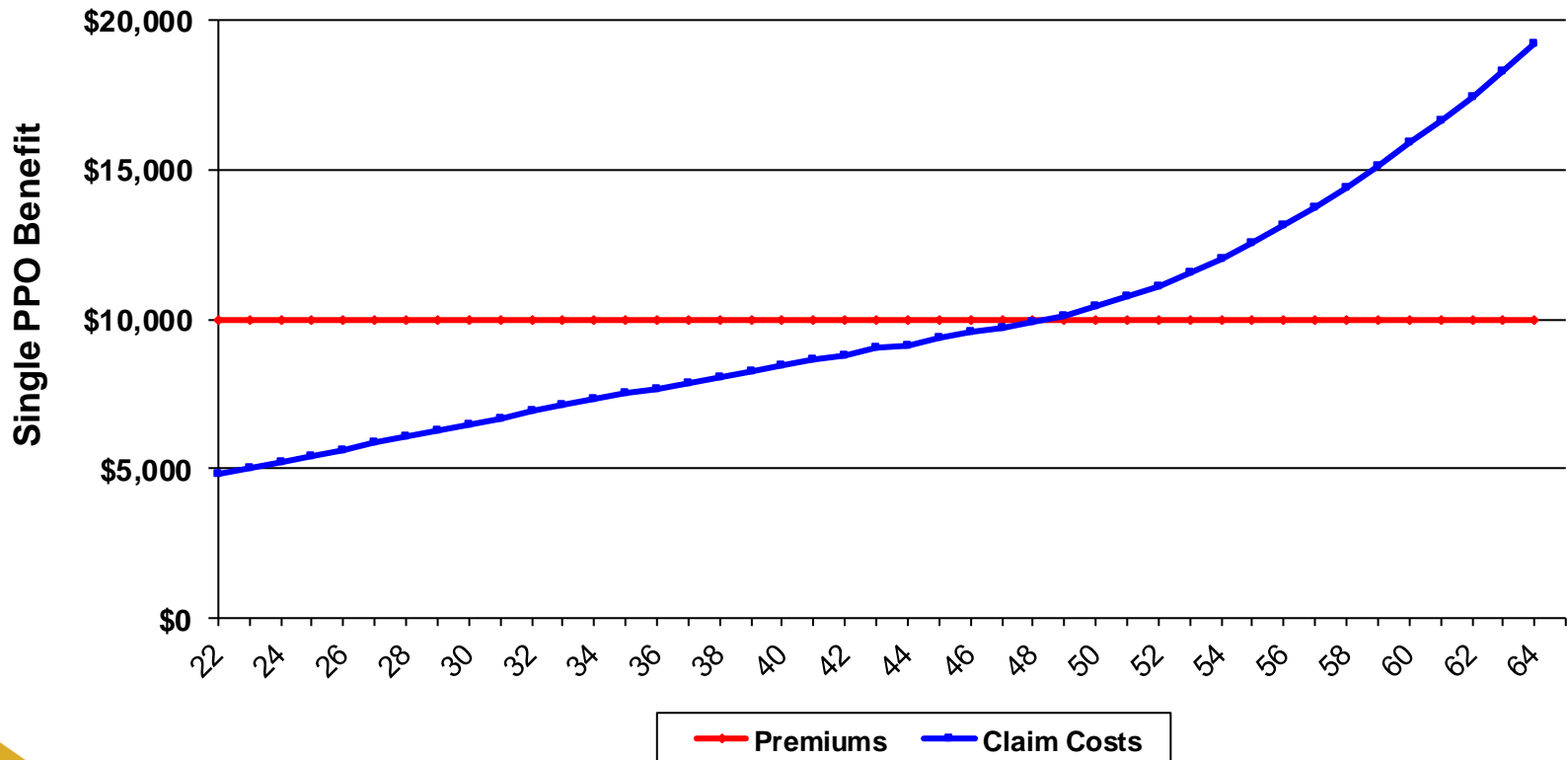
Claim Costs

Aging and Implicit Rate Subsidies

- The initial per capita costs must consider ages, gender, and other characteristics of OPEB members
- It is recognized that younger individuals generally consume less medical costs, and older individuals generally incur higher medical costs.
 - Actuarial valuation must reflect true cost of coverage
- Also, some companies set premiums or combine experience for both active and retired individuals
 - Thus, **even “retiree pay all” plans may actually have a hidden subsidy**, the “implicit rate subsidy”, as non-Medicare retirees are actually paying less than the full (or “true”) cost of coverage
 - The average (blended) premium plus retiree contributions may not cover the true underlying cost of retiree benefits
 - Therefore, the plan sponsor’s share of OPEB costs to retirees must include the underpayment by which retiree costs are subsidized through higher costs on behalf of active employees
 - The result is an “average” medical premium cost which somewhat overstates the medical cost of current employees (actives) and somewhat understates the medical cost of retirees – **the younger tend to subsidize the older**

The Hidden Cost of “Implicit Rate Subsidies”

Medical Benefits – Premium Level Versus Claim Cost by Age



Test Case Detail

- Participant is currently age 50
- Participant currently has five years of service
- Benefit eligibility is age 55 with ten years of service
- The company subsidizes 80 percent of benefit costs for retiree/spouse
- Participant has not elected spousal coverage
- The pre-65 premium is \$12,500 and post-65 premium is \$6,250 (company subsidy = \$10,000/\$5,000)
 - The average age of the pre-65 group is age 45
 - The average age of the post-65 group is age 67
 - Premiums are assumed to increase by decreasing factors as participants age

Year	Age	Subsidy	Aging	Per Capita Cost	Trend	Participation	Persistency	Retirement	Mortality	Discount
2015	50	\$10,000	3%	\$11,593						
2016	51	10,000	3%	11,941						
2017	52	10,000	3%	12,299						
2018	53	10,000	3%	12,668						
2019	54	10,000	3%	13,048						
2020	55	10,000	3%	13,439						
2021	56	10,000	3%	13,842						
2022	57	10,000	3%	14,258						
2023	58	10,000	3%	14,685						
2024	59	10,000	3%	15,126						
2025	60	10,000	2%	15,428						
2026	61	10,000	2%	15,737						
2027	62	10,000	2%	16,052						
2028	63	10,000	2%	16,373						
2029	64	10,000	2%	16,700						
2030	65	5,000	1%	4,901						
2031	66	5,000	1%	4,950						
2032	67	5,000	0%	5,000						
2033	68	5,000	1%	5,050						
2034	69	5,000	1%	5,101						
2035	70	5,000	1%	5,152						
⋮			Total	\$243,342						

Healthcare Trend Assumption

- The trend assumption models expected future increases in healthcare costs
- These rates are applied to the initial per capita claim costs to determine the annual cost of coverage in future years
- Dependent on inflation, utilization, technology improvements, administrative costs, and benefit packages
- The assumed increases in healthcare costs often vary by type (i.e., medical, prescription drug, dental, vision, administration)

Healthcare Trend Assumption (*continued*)

Components

- Initial Rate
 - Expected increase in healthcare costs into the second year of the valuation
 - Should reflect plan specific experience
- Ultimate Rate
 - It is generally accepted in the actuarial community and by health economists that the current/recent increases in healthcare are not sustainable
 - Can't continue to outpace GDP indefinitely
 - Typically, a long-term rate lower than the initial trend rate is assumed
- Grade down period
 - Transition between initial rate and ultimate rate

Healthcare Trend Assumption *(continued)*

History

- Years ago, a typical trend assumption was ten, eight and five percent
 - This very short grade down period resulted in resetting each valuation cycle
 - Implicit actuarial losses
 - Understated obligations
- Over time, most sponsors moved to a longer transition period which eliminated the annual reset
 - As an example, a typical initial trend rate is in the seven to ten percent range and grades down over a period of six to ten years to an ultimate rate around five percent
- However, a study published by the Society of Actuaries (Getzen Model) resulted in multi-generational grade-down period
 - Some actuarial firms are "requiring" its use

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- Participant currently has five years of service
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- Participant has not elected spousal coverage
- The pre-65 premium is \$12,500 and post-65 premium is \$6,250 (company subsidy = \$10,000/\$5,000)
 - The average age of the pre-65 group is age 45
 - The average age of the post-65 group is age 67
 - Premiums are assumed to increase by decreasing factors as participants age
- Per-capita costs are assumed to increase annually by a trend factor of 8.00 percent that grades down 0.25 percent per year to an ultimate rate of 5.00 percent

Year	Age	Subsidy	Aging	Trend	Per Capita Cost	Participation	Persistency	Retirement	Mortality	Discount
2015	50	\$10,000	3%	8.00%	\$11,593					
2016	51	10,000	3%	7.75%	12,896					
2017	52	10,000	3%	7.50%	14,312					
2018	53	10,000	3%	7.25%	15,847					
2019	54	10,000	3%	7.00%	17,506					
2020	55	10,000	3%	6.75%	19,293					
2021	56	10,000	3%	6.50%	21,213					
2022	57	10,000	3%	6.25%	23,270					
2023	58	10,000	3%	6.00%	25,466					
2024	59	10,000	3%	5.75%	27,804					
2025	60	10,000	2%	5.50%	29,991					
2026	61	10,000	2%	5.25%	32,273					
2027	62	10,000	2%	5.00%	34,647					
2028	63	10,000	2%	5.00%	37,106					
2029	64	10,000	2%	5.00%	39,741					
2030	65	5,000	1%	5.00%	12,247					
2031	66	5,000	1%	5.00%	12,988					
2032	67	5,000	0%	5.00%	13,774					
2033	68	5,000	1%	5.00%	14,607					
2034	69	5,000	1%	5.00%	15,491					
2035	70	5,000	1%	5.00%	16,428					
⋮				Total	\$448,492					

Participation and Persistency

- The participation assumption models the portion of eligible active participants assumed to elect OPEB coverage upon retirement
- The persistency assumption models the percentage of current retired participants that continue coverage in future years
- Both are highly dependent on cost sharing provisions of the OPEB
 - In cost sharing plans, as the participant's contribution increases, the likelihood they will participate in the OPEB at retirement decreases
 - May have other options
 - For those initially participating, healthcare cost trend makes the coverage very expensive very quickly
 - Some retirees lapse in coverage
- The benefit obligations are significantly impacted by these assumptions
 - Need to be supported by historical experience
- Plan design changes may also impact participation/persistency levels
- Adverse selection consideration
 - Retirees choosing to participate and persist in coverage may have higher average benefit costs

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 - The average age of the pre-65 group is age 45
 - The average age of the post-65 group is age 67
 - Premiums are assumed to increase by decreasing factors as participants age
- Per-capita costs are assumed to increase annually by a trend factor of 8.00 percent that grades down 0.25 percent per year to an ultimate rate of 5.00 percent
- Assuming 95 percent probability employees will participate in the OPEB at retirement
- Assuming two percent probability per year that a retiree will lapse in coverage upon becoming eligible for Medicare

Year	Age	Subsidy	Aging	Trend	Participation	Persistency	Total	Retirement	Mortality	Discount
2015	50	\$10,000	3%	8.00%	0%	0%	\$0			
2016	51	10,000	3%	7.75%	0%	0%	0			
2017	52	10,000	3%	7.50%	0%	0%	0			
2018	53	10,000	3%	7.25%	0%	0%	0			
2019	54	10,000	3%	7.00%	0%	0%	0			
2020	55	10,000	3%	6.75%	95%	100%	18,328			
2021	56	10,000	3%	6.50%	95%	100%	20,153			
2022	57	10,000	3%	6.25%	95%	100%	22,106			
2023	58	10,000	3%	6.00%	95%	100%	24,193			
2024	59	10,000	3%	5.75%	95%	100%	26,414			
2025	60	10,000	2%	5.50%	95%	100%	28,491			
2026	61	10,000	2%	5.25%	95%	100%	30,659			
2027	62	10,000	2%	5.00%	95%	100%	32,914			
2028	63	10,000	2%	5.00%	95%	100%	35,251			
2029	64	10,000	2%	5.00%	95%	100%	37,754			
2030	65	5,000	1%	5.00%	95%	98%	11,402			
2031	66	5,000	1%	5.00%	95%	98%	11,850			
2032	67	5,000	0%	5.00%	95%	98%	12,316			
2033	68	5,000	1%	5.00%	95%	98%	12,799			
2034	69	5,000	1%	5.00%	95%	98%	13,302			
2035	70	5,000	1%	5.00%	95%	98%	13,825			
⋮						Total	\$351,758			

Retirement Rates

- Retirement decrements are critical in the valuation of OPEB plans
- Models the age(s) at which active/terminated vested participants commence receipt of benefits
 - The typical plan defines normal retirement as a combination of age and service
 - Generally, the base table is represented by age-based rates
 - Separate age/service based rates are needed to reflect special eligibilities ("30 and out" or "Rule of 80")
 - Actual retirement experience impacts the number and timing of cash flows
- Retirement decrements need to reflect OPEB eligibility provisions
 - Single age generally not appropriate if early retirement available
 - OPEB benefit payments are structurally different than pension payments which are typically paid on an actuarially equivalent basis
 - Benefit payments not modeled in OPEB valuations result in artificially low obligations

Retirement Rates *(continued)*

- Other considerations
 - Experience and expectations
 - Experience of similar companies may be useful if plan specific experience is insufficient
 - Economic environment
 - Industry work conditions, physical requirements of job
 - Financial health of employer

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 - The average age of the pre-65 group is age 45
 - The average age of the post-65 group is age 67
 - Premiums are assumed to increase by decreasing factors as participants age
- Per capita costs are assumed to increase annually by a trend factor of 8.00 percent that grades down 0.25 percent per year to an ultimate rate of 5.00 percent
- Assuming 95 percent probability employees will participate in the OPEB at retirement
- Assuming two percent probability per year that a retiree will lapse in coverage upon becoming eligible for Medicare
- There is ten percent probability per year that participant will retire from ages 55 to 64
 - 30 percent probability assumed at age 60
 - 100 percent probability assumed at the ultimate retirement age of 65

Year	Age	Subsidy	Aging	Trend	Participation	Persistency	Retirement	Total	Mortality	Discount
2015	50	\$10,000	3%	8.00%	0%	0%	0%	\$0		
2016	51	10,000	3%	7.75%	0%	0%	0%	0		
2017	52	10,000	3%	7.50%	0%	0%	0%	0		
2018	53	10,000	3%	7.25%	0%	0%	0%	0		
2019	54	10,000	3%	7.00%	0%	0%	0%	0		
2020	55	10,000	3%	6.75%	95%	100%	10%	1,833		
2021	56	10,000	3%	6.50%	95%	100%	10%	3,829		
2022	57	10,000	3%	6.25%	95%	100%	10%	5,991		
2023	58	10,000	3%	6.00%	95%	100%	10%	8,320		
2024	59	10,000	3%	5.75%	95%	100%	10%	10,817		
2025	60	10,000	2%	5.50%	95%	100%	30%	16,714		
2026	61	10,000	2%	5.25%	95%	100%	10%	19,254		
2027	62	10,000	2%	5.00%	95%	100%	10%	21,894		
2028	63	10,000	2%	5.00%	95%	100%	10%	24,629		
2029	64	10,000	2%	5.00%	95%	100%	10%	27,515		
2030	65	5,000	1%	5.00%	95%	98%	100%	11,402		
2031	66	5,000	1%	5.00%	95%	98%	100%	11,850		
2032	67	5,000	0%	5.00%	95%	98%	100%	12,316		
2033	68	5,000	1%	5.00%	95%	98%	100%	12,799		
2034	69	5,000	1%	5.00%	95%	98%	100%	13,302		
2035	70	5,000	1%	5.00%	95%	98%	100%	13,825		
⋮							Total	\$216,290		

Mortality Rates

- The base mortality rates for most plan valuations are based on standard tables such as those produced by the Society of Actuaries (SOA), and may be adjusted to reflect characteristics of the group (blue collar, occupation, medical coverage)
 - Examples are RP-2014 and RP-2000
 - Generally named based on characteristics of underlying data and last year of experience
 - RP-2014 Headcount Weighted rates are more appropriate for OPEB
- Depending on the size of the group, plan experience may be partially credible for use as adjustments to a standard table

Mortality Rates (*continued*)

- Standard tables typically contain no margin for past and future mortality improvement which should be considered
 - Mortality rates have consistently improved in the past
 - Projection scales are provided with most SOA tables (MP-2014, Scale BB, Scale AA)
 - The scales are applied to reduce probabilities of death
- Based on the underlying plan demographic, current valuations should likely use the RP-2014 "base" to reflect the longevity experienced in the general population
 - The use of an "older" table needs to be supported by credible historical plan experience and needs to reflect management's best estimate of future experience
 - Use of rates other than RP-2014 with Projection Scale MP-2014 should be discussed and confirmed with auditors early in the valuation cycle
- Very significant assumption based on the structure of OPEB plans
 - Subsidized benefits often paid for life
 - Increasing nature of healthcare costs

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 - The average age of the pre-65 group is age 45
 - The average age of the post-65 group is age 67
 - Premiums are assumed to increase by decreasing factors as participants age
- Per capita costs are assumed to increase annually by a trend factor of 8.00 percent that grades down 0.25 percent per year to an ultimate rate of 5.00 percent
- Assuming 95 percent probability employees will participate in the OPEB at retirement
- Assuming two percent probability per year that a retiree will lapse in coverage upon becoming eligible for Medicare
- There is a ten percent probability per year that a participant will retire from ages 55 to 64
 - 30 percent probability assumed at age 60
 - 100 percent probability assumed at the ultimate retirement age of 65
- Mortality rates are from the RP-2014 Headcount Weighted Mortality Table

Year	Age	Subsidy	Aging	Trend	Participation	Persistency	Retirement	Mortality	Total	Discount
2015	50	\$10,000	3%	8.00%	0%	0%	0%	0.20%	\$0	
2016	51	10,000	3%	7.75%	0%	0%	0%	0.20%	0	
2017	52	10,000	3%	7.50%	0%	0%	0%	0.30%	0	
2018	53	10,000	3%	7.25%	0%	0%	0%	0.30%	0	
2019	54	10,000	3%	7.00%	0%	0%	0%	0.30%	0	
2020	55	10,000	3%	6.75%	95%	100%	10%	0.30%	1,809	
2021	56	10,000	3%	6.50%	95%	100%	10%	0.40%	3,768	
2022	57	10,000	3%	6.25%	95%	100%	10%	0.40%	5,872	
2023	58	10,000	3%	6.00%	95%	100%	10%	0.50%	8,122	
2024	59	10,000	3%	5.75%	95%	100%	10%	0.50%	10,507	
2025	60	10,000	2%	5.50%	95%	100%	30%	0.60%	16,155	
2026	61	10,000	2%	5.25%	95%	100%	10%	0.60%	18,497	
2027	62	10,000	2%	5.00%	95%	100%	10%	0.70%	20,908	
2028	63	10,000	2%	5.00%	95%	100%	10%	0.80%	23,355	
2029	64	10,000	2%	5.00%	95%	100%	10%	0.90%	25,883	
2030	65	5,000	1%	5.00%	95%	98%	100%	1.00%	10,629	
2031	66	5,000	1%	5.00%	95%	98%	100%	1.10%	10,936	
2032	67	5,000	0%	5.00%	95%	98%	100%	1.20%	11,241	
2033	68	5,000	1%	5.00%	95%	98%	100%	1.30%	11,542	
2034	69	5,000	1%	5.00%	95%	98%	100%	1.40%	11,840	
2035	70	5,000	1%	5.00%	95%	98%	100%	1.60%	12,133	
⋮								Total	\$203,197	

Discount Rate

- The assumed discount rate should reflect the rates at which the OPEB benefits could be effectively settled and are used in the measurements of benefit obligations
 - Based on the OPEB payment pattern
 - The discount rate used to value pension obligations may not be appropriate for OPEB
- Regulations permit an employer to look to rates of return on high-quality fixed-income investments in determining assumed discount rates
 - Not directly defined, but broadly considered AA-rated or better

Discount Rate *(continued)*

- Plan sponsors use various methods to set the discount rate
 - Cash flow modeling
 - Match OPEB plan specific expected benefits to spot rates from an appropriate yield curve of high-quality fixed-income investments
 - Solve for a single equivalent discount rate that results in the same present value of benefits
 - Produces the "truest" rate and preferred by auditors
 - Bond Modeling
 - Construct a hypothetical bond portfolio, rather than using a yield curve
 - Typically results in higher discount rates

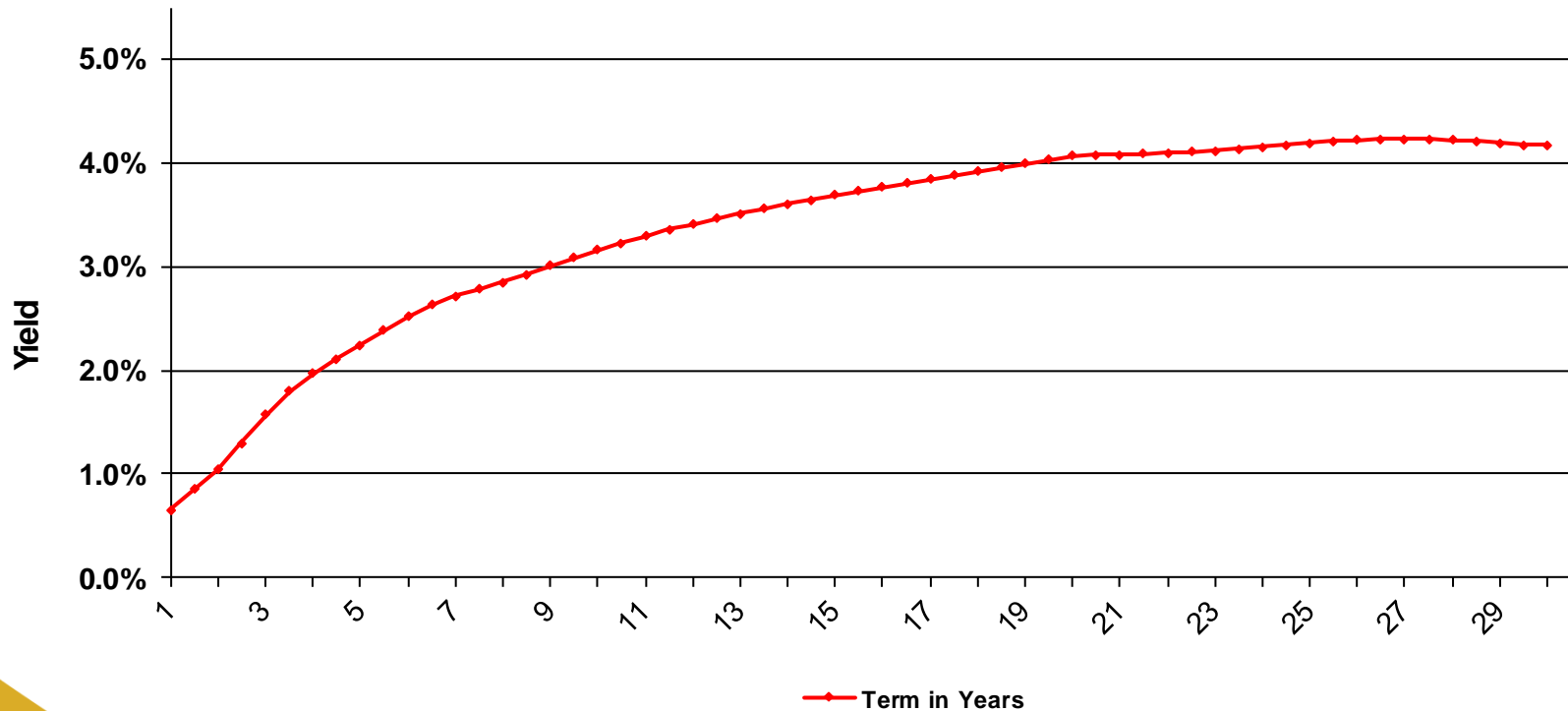
Discount Rate *(continued)*

- Reference to index rates
 - Does not apply to a specific plan
 - Must demonstrate timing and amount of cash flows in index are representative of OPEB plan specific cash flows
 - For example, Citigroup Pension Liability Index ("CPLI") or Moody's AA Corporate Bond Yield
- The plan sponsor should adopt an appropriate rate setting methodology and use consistently

Discount Rate

Citigroup Pension Discount Curve (CPDC)

December 31, 2014



Test Case Detail

- Participant is currently age 50
- Participant currently has five years of service
- Benefit eligibility is age 55 with ten years of service
- The company subsidizes 80 percent of benefit costs for retiree/spouse
- Participant has not elected spousal coverage
- The pre-65 premium is \$12,500 and post-65 premium is \$6,250 (company subsidy = \$10,000/\$5,000)
 - The average age of the pre-65 group is age 45
 - The average age of the post-65 group is age 67
 - Premiums are assumed to increase by decreasing factors as participants age
- Per capita costs are assumed to increase annually by a trend factor of 8.00 percent that grades down 0.25 percent per year to an ultimate rate of 5.00 percent
- Assuming 95 percent probability employees will participate in the OPEB at retirement
- Assuming two percent probability per year that a retiree will lapse in coverage upon becoming eligible for Medicare
- There is a ten percent probability per year that a participant will retire from ages 55 to 64
 - 30 percent probability assumed at age 60
 - 100 percent probability assumed at the ultimate retirement age of 65
- Mortality rates are from the RP-2014 Headcount Weighted Mortality Table
- 4.38 percent discount rate assumed for all years (based on CPDC cash flow matching)

Year	Age	Subsidy	Aging	Trend	Participation	Persistency	Retirement	Mortality	Discount	Total
2015	50	\$10,000	3%	8.00%	0%	0%	0%	0.20%	4.38%	\$0
2016	51	10,000	3%	7.75%	0%	0%	0%	0.20%	4.38%	0
2017	52	10,000	3%	7.50%	0%	0%	0%	0.30%	4.38%	0
2018	53	10,000	3%	7.25%	0%	0%	0%	0.30%	4.38%	0
2019	54	10,000	3%	7.00%	0%	0%	0%	0.30%	4.38%	0
2020	55	10,000	3%	6.75%	95%	100%	10%	0.30%	4.38%	1,460
2021	56	10,000	3%	6.50%	95%	100%	10%	0.40%	4.38%	2,914
2022	57	10,000	3%	6.25%	95%	100%	10%	0.40%	4.38%	4,350
2023	58	10,000	3%	6.00%	95%	100%	10%	0.50%	4.38%	5,764
2024	59	10,000	3%	5.75%	95%	100%	10%	0.50%	4.38%	7,144
2025	60	10,000	2%	5.50%	95%	100%	30%	0.60%	4.38%	10,523
2026	61	10,000	2%	5.25%	95%	100%	10%	0.60%	4.38%	11,543
2027	62	10,000	2%	5.00%	95%	100%	10%	0.70%	4.38%	12,500
2028	63	10,000	2%	5.00%	95%	100%	10%	0.80%	4.38%	13,377
2029	64	10,000	2%	5.00%	95%	100%	10%	0.90%	4.38%	14,203
2030	65	5,000	1%	5.00%	95%	98%	100%	1.00%	4.38%	5,588
2031	66	5,000	1%	5.00%	95%	98%	100%	1.10%	4.38%	5,508
2032	67	5,000	0%	5.00%	95%	98%	100%	1.20%	4.38%	5,424
2033	68	5,000	1%	5.00%	95%	98%	100%	1.30%	4.38%	5,336
2034	69	5,000	1%	5.00%	95%	98%	100%	1.40%	4.38%	5,243
2035	70	5,000	1%	5.00%	95%	98%	100%	1.60%	4.38%	5,148
⋮									Total	\$116,023

Key OPEB Obligation Measures

Test Case

Present Value of Future Benefits (pvFB) – past and future service

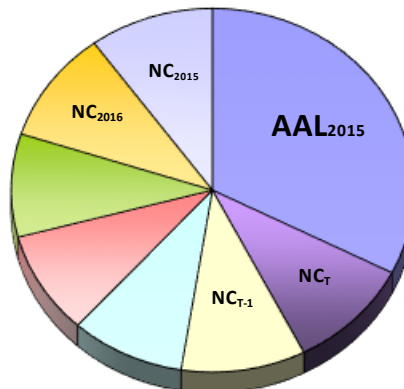
- Total projected costs to finance future benefits based upon past and future service
 - \$116,023 in our test case

Actuarial Accrued Liability (AAL) – past service

- Portion of the pvFB earned (or accrued) based on service as of valuation date
 - Calculated as $\frac{\text{Prior Service}}{\text{Total Projected Service}} * \text{pvFB} = \frac{5 \text{ Years}}{15 \text{ Years}} * \$116,023 = \mathbf{\$38,674}$
 - Full eligibility is defined as age 55 with 10 years of service, but based on the decrements assumed, the total projected service is approximately 15 years

Normal Cost (NC) – current service

- Portion of pvFB attributable to services rendered during the year and increased eligibility
 - Calculated as $\frac{\text{Current Service}}{\text{Total Projected Service}} * \text{pvFB} = \frac{1 \text{ Year}}{15 \text{ Years}} * \$116,023 = \mathbf{\$7,735}$



pvFB

Additional Assumptions and Considerations

Dedicated Assets

- Used to determine unfunded obligation, normal cost allocation, and expected return on assets component of the NPPBC
 - Used when investments are held in an irrevocable trust
- Funding OPEB plans through an irrevocable trust is not prevalent
 - Implies permanence
 - Assets may not be diverted to other uses until OPEB obligations have been satisfied
 - Tax benefit received not as valuable as pension funding
- The expected return on assets should be based on the trust asset allocation
 - Represents the average rate of earnings expected over the long term on funds invested to provide future benefits
 - The typical asset mix of pension plan sponsors is 60 percent equity/40 percent fixed income
 - Usually produces a ROR in the seven to eight percent range
 - The asset mix of OPEB plan sponsors typically has a higher fixed income allocation

Expected Rate of Return on Assets

- Can be constructed by asset return generator or portfolio return calculator models
- Long-term assumption but it is reviewed regularly
- If the asset allocation by class changes, or if expected returns for any asset class changes, then this rate may need to change

Salary Increases

- Used to project a participant's future compensation for pay related benefits (i.e. variable life insurance)
- Reflects expected inflation, productivity, seniority and promotion
- Generally varies by job type, industry and between companies

Salary Increases *(continued)*

- Generally higher earlier in a person's career and typically varies by service and/or age
 - An age/service based table of increases would be appropriate in most cases
 - Many sponsors use a flat rate (for example, three or four percent annual increases)
- It is best practice for this rate to be based on past plan experience, along with future expectations

Withdrawal/Termination Rates

- Withdrawal rates model the termination incidence from service for reasons other than retirement, death, and disablement; rates typically vary by age and/or service
- Service is an important predictor of termination
 - Typically higher rates of termination for shorter service employees, decreasing as benefit eligibility is reached

Withdrawal/Termination Rates *(continued)*

- Based on plan specific experience and existing tables, depending on size of the group
 - Very large groups may have enough credible experience
 - Standard tables, with adjustments to reflect experience or industry, are often used
 - Significant events may impact withdrawal rates (for example, benefit changes to pensions or OPEB plans)

Plan Amendments

Impact on Sample Plan

OPEB Plan Amendments

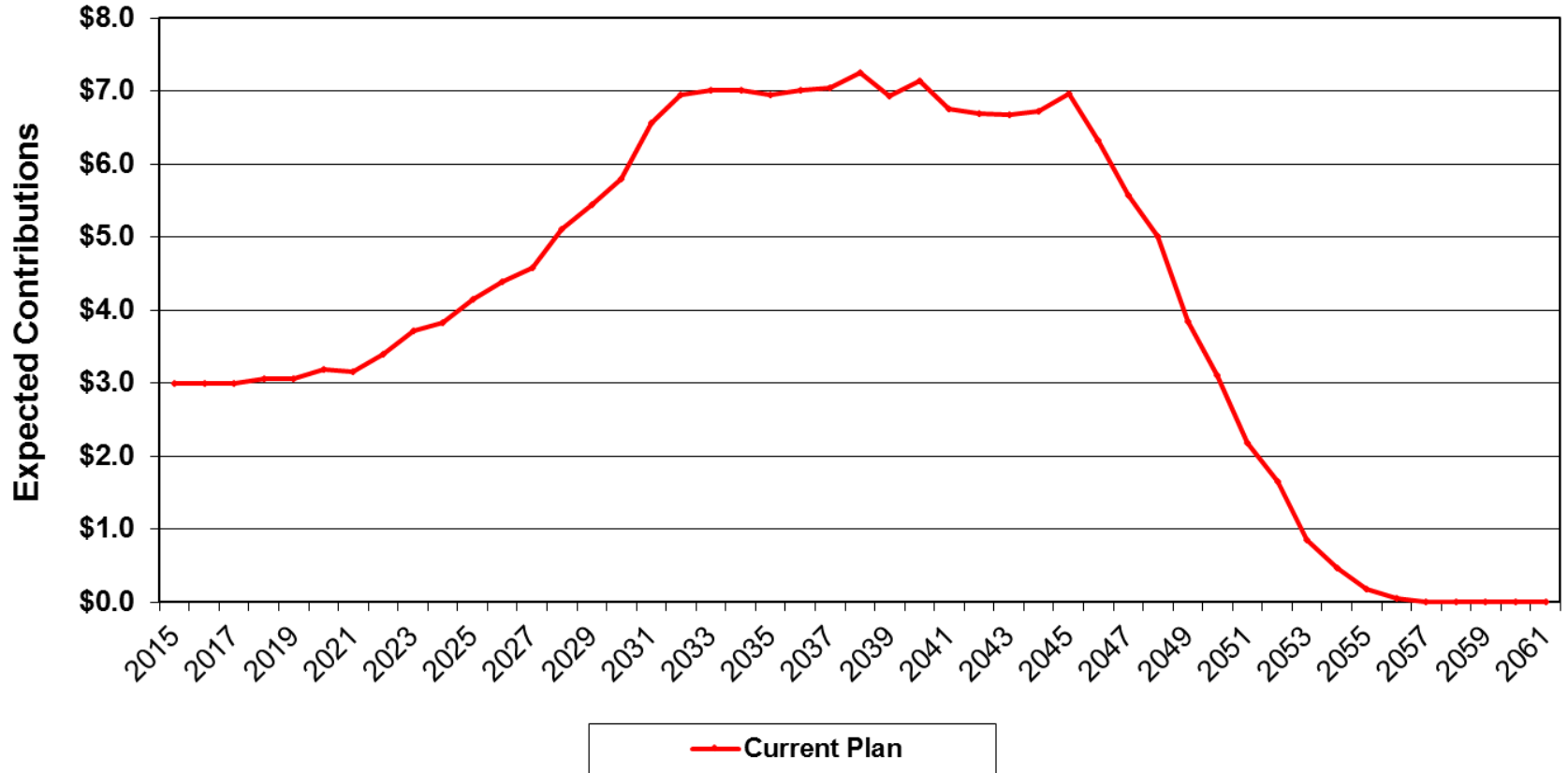
- OPEB plans subsidize all or a portion of retirees' healthcare
- These subsidies typically increase over time due to increases in healthcare plan premiums
- The plan sponsor can reduce costs by amending the OPEB in the following ways:
 - Closing OPEB participation to new entrants
 - Future cost savings
 - Reducing the subsidy amount
 - Limiting future subsidy increases
 - Implementing a fixed "cost cap"
 - The annual subsidy the retiree receives will *never* exceed a specified level

Summary of Plan Provisions

Provisions	All Participants
<p>Eligibility</p>	<p>Retiree ages 55-65 Ten years of service</p>
<p>Benefits</p>	<p>Pre-65 benefits only Medical and prescription drug coverage for retiree and dependents Dental and vision subsidy for retiree only</p>
<p>Cost Sharing</p>	<p>In the 2011 Fiscal Year, employer subsidized the premiums up to \$14,000 However, in the 2011-2014 Fiscal Years, the employer covered up to an eight percent inflation increase over the prior year In the 2015 Fiscal Year, the employer reset the "cost cap" to \$14,000 This amount will increase up to an eightpercent annual increase in future years, consistent with the percentage given to active employees</p>


OPEB Payout Projection – Current Plan

(\$ in Millions)




OPEB Payout Projection *(continued)*

Plan Provisions, Demographics and Assumptions result in the estimated benefit payment stream for all current Participants for the duration of the OPEB

Fiscal Year	(\$ in millions)	
	<u>Projected Employer Provided Benefits</u> Current Plan	Present Value of Future Benefits (pvFB)
2015	3.0	
2016	3.0	
:	:	
2025	4.4	
2026	4.6	
:	:	
2035	7.0	
2036	7.0	
:	:	
2049	3.1	
2050	2.2	
:	:	
	<u> </u>	
	\$194.7	

Discount Rates



The pvFB is the discounted value of projected future benefits (pvFB of Current Plan = \$80.2m). Implicit rate subsidies are factored into the present value.

Key ASC 715 Measures

Current Plan Results

Measurement Date	January 1, 2015 ¹ (\$ in millions)
Present Value of Future Benefits	
Actives	\$57.0
<u>Retirees</u>	<u>23.2</u>
Total	\$80.2
Actuarial Accrued Liability	
Actives	\$22.0
<u>Retirees</u>	<u>23.2</u>
Total	\$45.2
Service Cost	\$2.6
Net Periodic Postretirement Benefit Cost	\$3.3

¹Utilizes a "cost cap" of \$14,000 for the 2015 fiscal year. However, this amount is increased up to eight percent in future years consistent with what active employees receive.

Key ASC 715 Measures

Current Plan Results (*continued*)

Measurement Date	January 1, 2015 (\$ in millions)
Actuarial Accrued Liability	
AAL at Beginning of Year	\$46.4
Service Cost	2.5
Interest Cost	2.4
Benefit Payments	(3.1)
<u>Actuarial (Gain)/Loss</u>	<u>(3.0)</u>
AAL at End of Year	\$45.2
Net Periodic Postretirement Benefit Cost	
Service Cost	\$2.6
Interest Cost	2.0
Amortization of Prior Service Cost	0.0
Amortization of Net (Gain)/Loss	(1.3)
<u>Amortization of Transition Obligation</u>	<u>0.0</u>
NPPBC	\$3.3

Summary of Plan Provisions

Proposed Plan Changes

- For the 2015 fiscal year, the plan sponsor reset the "cost cap" to \$14,000
 - However, the "cost cap" continues to increase up to eight percent annually
 - Not a large reduction in obligations because the annual subsidy increases outpace the assumed growth in per capita costs
- A fixed cap would significantly reduce OPEB costs
 - The cost cap would remain at \$14,000 in all future years

Impact of "Capping" Subsidy

Sample Plan – Two Party PPO Premium

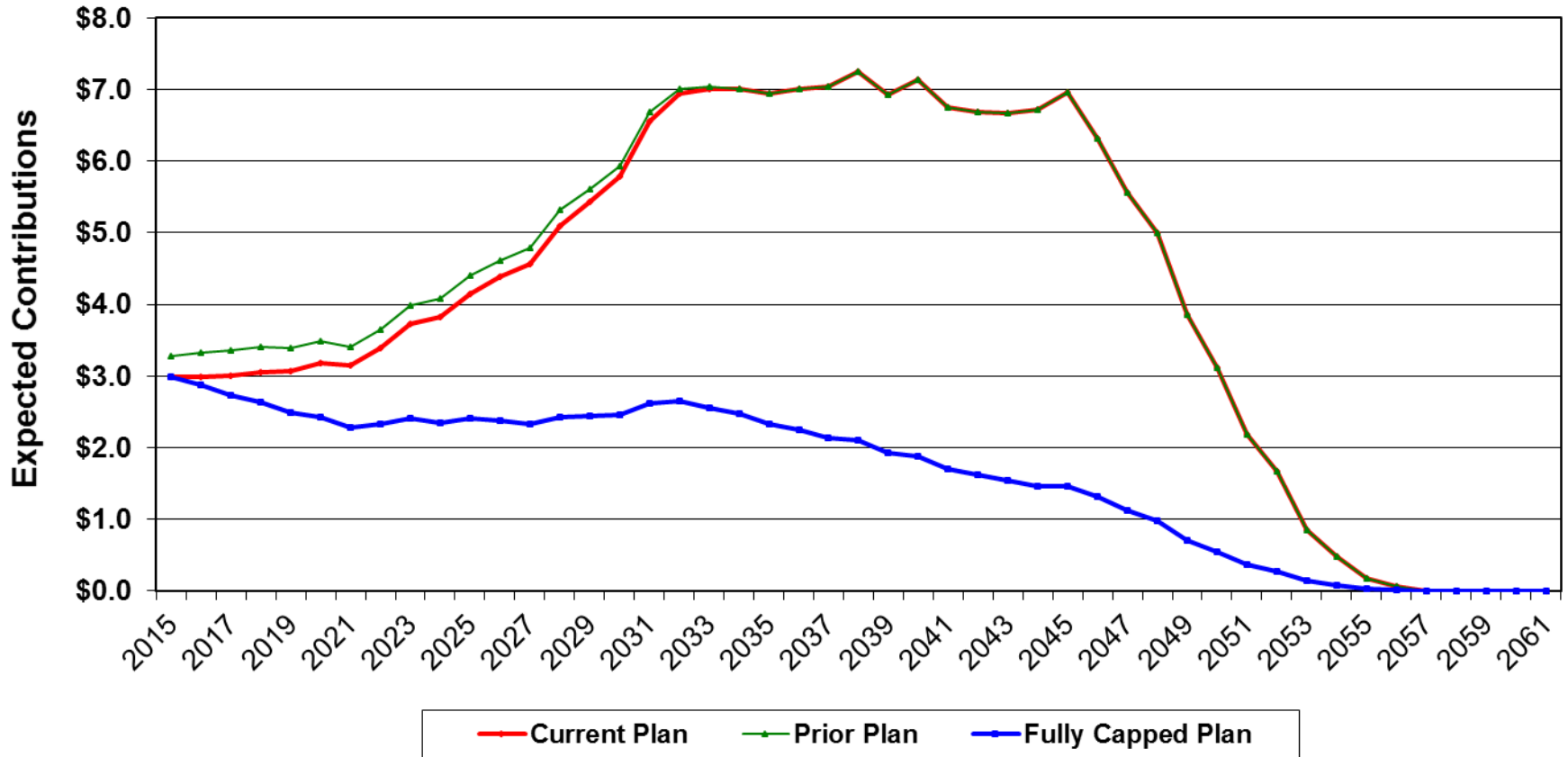
Fiscal Year	(\$ in Thousands)		(\$ in Thousands)	
	Valuation Premium ²	Current Cap ³	Prior Cap ³	Full Cap
2015	\$17.7	\$14.0	\$18.4	\$14.0
2016	19.0	15.1	19.9	14.0
:	:	:	:	:
2025	33.4	32.6	42.9	14.0
2026	35.4	35.3	46.3	14.0
:	:	:	:	:
2035	59.0	70.5	92.6	14.0
2036	62.3	76.1	100.0	14.0
:	:	:	:	:
2050	129.9	207.0	272.0	14.0
2051	136.7	223.6	293.8	14.0

²Assumes healthcare inflation, based on a blend of the Getzen Model and actual historical premium experience

³The respective subsidized benefit amounts under the current and prior plan are increased up to eight percent per year, which is the same percentage as given to active employees

OPEB Payout Projection

(\$ in Millions)



OPEB Payout Projection *(continued)*

Plan Provisions, Demographics and Assumptions result in the estimated benefit payment stream for all current Participants for the duration of the OPEB

Fiscal Year	(\$ in millions)			Present Value of Future Benefits (pvFB)
	Projected Employer Provided Benefits			
	Current Plan	Prior Plan	Full Cap	
2015	3.0	3.3	3.0	
2016	3.0	3.3	2.9	
:	:	:	:	
2025	4.4	4.6	2.4	
2026	4.6	4.8	2.3	
:	:	:	:	
2035	7.0	7.0	2.2	
2036	7.0	7.0	2.1	
:	:	:	:	
2049	3.1	3.1	0.5	
2050	2.2	2.2	0.4	
:	:	:	:	
	<u>\$194.7</u>	<u>\$199.2</u>	<u>\$76.2</u>	

Discount Rate

The pvFB is the discounted value of projected future benefits.

Key ASC 715 Measures - Results

Measurement Date (\$ in millions)	January 1, 2014 (Prior Plan) ⁴	January 1, 2015 (Current Plan) ⁵	January 1, 2015 (Full Cap) ⁶
Present Value of Future Benefits			
Actives	\$58.0	\$57.0	\$21.8
Retirees	<u>24.3</u>	<u>23.2</u>	<u>17.8</u>
Total	\$82.3	\$80.2	\$39.6
Actuarial Accrued Liability			
Actives	\$22.1	\$22.0	\$9.6
Retirees	<u>24.3</u>	<u>23.2</u>	<u>17.8</u>
Total	\$46.4	\$45.2	\$27.4
Service Cost	\$2.6	\$2.6	\$1.2
Net Periodic Postretirement Benefit Cost	\$4.0	\$3.3	(\$0.4)

⁴Utilizes "cost cap" of \$14,000 for the 2011 fiscal year, which increases up to 8% in all future years.
(\$17,500 in the 2014 fiscal year)

⁵Utilizes "cost cap" of \$14,000 for the 2015 fiscal year, which increases up to 8% in all future years.

⁶Utilizes fixed "cost cap" of \$14,000 in **all** future fiscal years.

Key ASC 715 Measures - Results *(continued)*

Fiscal Year Ending (\$ in millions)	January 1, 2014 (Prior Plan)	January 1, 2015 (Current Plan)	January 1, 2015 (Full Cap)
Actuarial Accrued Liability			
AAL at Beginning of Year	\$45.4	\$46.4	\$46.4
Service Cost	2.8	2.6	2.6
Interest Cost	2.1	2.4	2.4
Benefit Payments	(3.2)	(3.1)	(3.1)
<u>Actuarial (Gain)/Loss</u>	<u>(0.7)</u>	<u>(3.1)</u>	<u>(20.9)</u>
AAL at End of Year	\$46.4	\$45.2	\$27.4

Fiscal Year Ending (\$ in millions)	January 1, 2014 (Prior Plan)	January 1, 2015 (Current Plan)	January 1, 2015 (Full Cap)
Net Periodic Postretirement Benefit Cost			
Service Cost	\$2.6	\$2.6	\$1.2
Interest Cost	2.4	2.0	1.2
Amortization of Prior Service Cost	0.0	0.0	0.0
Amortization of Net (Gain)/Loss	(1.0)	(1.3)	(2.8)
<u>Amortization of Transition Obligation</u>	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>
NPPBC	\$4.0	\$3.3	(\$0.4)

Thank you!

For additional information regarding OPEB,
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Questions?